PUBLIC LIBRARY
MAR 2 8 1946
DETROIT

The Journal of Property Management

WINTER, 1945

PUBLISHED QUARTERLY BY THE

INSTITUTE OF REAL ESTATE MANAGEMENT

The JOURNAL of Property Management

Division of Publications

James C. Downs, Jr.
Chairman

Fred L. Chapman

H. Walter Graves

Editorial Staff

Olive Dyer
Associate Editor

C. M. Jones

Richard Lawrence Nelson

December, 1945

Volume XI

Number 2

Contents

Delbert S. Wenzlick—Man of the Quarter 82
Regional Vice-Presidents for 1946 84
The Editor's Review 87
The Village Green 91
Harry A. Taylor, C.P.M.
A Critique of Fixed Formula Methods of Pricing Office Space 97
B. L. Lefler
A Modern Real Estate Office 105
Frank L. Lort, C.P.M.
Painting Steel 109
Wilbur C. Porter
Do You Write Your Senator 122
Anonymous
Report of the Division of Education 125
Ben O. Kirkpatrick, Chairman
Report of the Division of Standards and Planning . 127
Nathan Poole, Chairman
Report of the Division of Research 128
Richard F. Jones, Jr., Chairman
Maintenance Exchange 129
What to Read 136
News of the Chapters 140
Accredited Management Organizations 141
Operation Manuals 142
New Certifications 143
National and Chapter Officers 148
Advisory Boards and Committees 151
Certified Property Managers 152

This publication is provided as a medium for the expression of individual opinion concerning management practice and procedure and topics allied thereto. The articles printed herein do not necessarily represent the endorsement of the Institute or of the majority of the members excepting as such statements may be designated as approved by the Governing Council. The editors exercise only a general supervision of the material and assume no responsibility for the opinions expressed by the contributors.

Published quarterly by the Institute of Real Estate Management at 22 West Monroe Street, Chicago 3, Illinois. Copyright 1945, by the Institute of Real Estate Management. All rights reserved.

Entered as second class matter July 24, 1941, at the post office at Chicago, Illinois, under the act of March 3, 1879. Subscription rates: $5.00 a year: $1.25 a copy. Remittances may be made by personal checks, drafts, or post office or express money orders payable to The Journal of Property Management, 22 West Monroe Street, Chicago 3, Ill. Printed in the United States of America.

Delbert S. Wenzlick

1946 President

Man of the Quarter

DELBERT S. WENZLICK

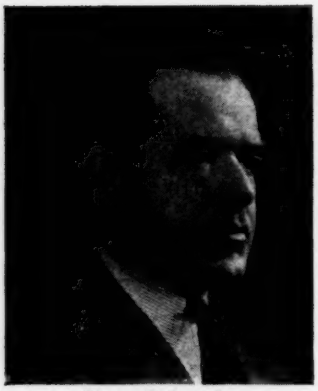
With each issue of its quarterly publication the Institute of Real Estate Management recognizes the distinguished service of one of its members by hereinbelow paying tribute to those accomplishments which have caused him to be named "Man of the Quarter."

ENTERING his second term as President of the Institute of Real Estate Management largely because of widespread recognition of his outstanding work for the Institute during 1945, Delbert S. Wenzlick, CPM, is certainly the Editor's choice for the first Institute "Man of the Quarter."

Under Mr. Wenzlick's skillful direction the Institute has made great strides during the past year. His deft leadership was responsible for the Institute's acceptance of a plan to accredit management organizations throughout the nation. Thus the Institute took another forward step in raising the general level of its profession and of the commercial enterprise which it serves.

Equally significant was the complete reorganization of the *modus operandi* of the Institute. Now divided into four major Divisions (Research, Education, Standards and Planning, and Publications) the Institute's entire program has been reanimated through a more effective method of capitalizing upon the enthusiasm and abilities of its far-flung members. Members of the Institute and property managers everywhere will soon begin to harvest the fruits of enlarged programs on the part of each of these Divisions. The crying national need for education for young men returning from the Armed Forces will be well served for those entering property management by the Institute's educational activities. Long needed research in methodology and materials will spring from the ambitious program of the Division of Research. Significant aid will be furnished to those wise enough to avail themselves of the Division of Standards and Planning in connection with the great construction program shortly to be undertaken by the nation. All of these findings will be correlated and made known to the world by the Division of Publications.

We salute Delbert S. Wenzlick for his leadership during 1945. We proclaim our gratitude for his sacrifice in visiting virtually every part of the United States in search of the opportunity to be of service to CPMs. We wish him equal success in his 1946 Presidency!



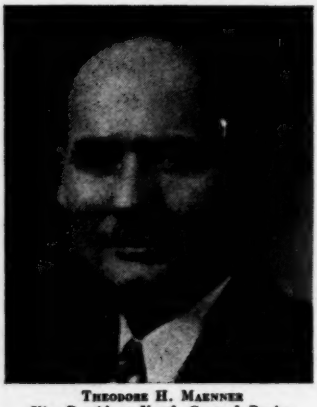
RICHARD F. JONES JR.
Vice-President New England Region
49 Pearl Street, Hartford, Conn.

STUART BONDURANT
Vice-President Southeast Region
210 W. Fourth St., Winston-Salem, N. C.

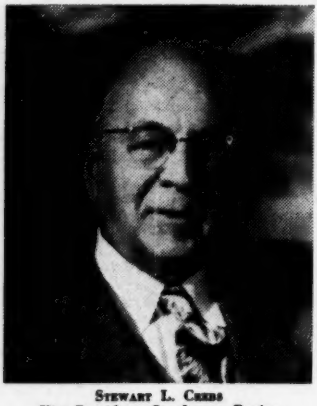
WILLIAM W. BARENDRICK
Vice-President Northwest Region
200 Wilcox Bldg., Portland, Ore.

WILLIAM J. PORTER JR.
Vice-President Great Lakes Region
1016 Prudden Bldg., Lansing, Mich.

C. ARMEL NUTTER
Vice-President Central Atlantic Region
509 Cooper St., Camden, N. J.



THEODORE H. MAENNER
Vice-President North Central Region
707 City Natl. Bk. Bldg., Omaha, Nebr.



STEWART L. CRIBB
Vice-President Southwest Region
124 S. LaBrea Ave., Los Angeles, Cal.

J. WALLACE PALETOU
Vice-President South Central Region
714 Union St., New Orleans, La.

REGIONAL VICE-PRESIDENTS ★ 1946

RICHARD F. JONES, Jr., was born in Hartford, Connecticut. He graduated from Yale University with a B.S. degree in 1928. He was employed as an engineer on building projects, the best known being the Bushnell Memorial Municipal Auditorium. He opened his own real estate office at his present downtown location on April 1, 1935. He has made a specialty of management and in addition to three Connecticut savings banks he represents the Equitable Life, many private investments, including one of the leading downtown buildings, and several large industrial plants. Some years ago he completed the Appraisal Courses and is a periodic contributor to newspapers and magazines on real estate subjects. For several years he was a member of the executive committee of the Hartford Board and he has served as president of the New England Chapter of the Institute of Real Estate Management.

STUART BONDURANT was born in Henry County, Virginia; graduated Leaksville High School, 1917; served two months in U. S. Army in 1918; graduated from University of North Carolina, class of 1922, degree B.S. Commerce; LLB. Degree conferred by Blackstone College of Law, 1936; secretary and manager Forsyth Finance Corporation, Winston-Salem, 1924-28; manager, Mortgage Loan Department, American Exchange National Bank, Greensboro, 1928-30; since 1930 he has been in real estate business in Winston-Salem under the firm name of Security Bond and Mortgage Company, of which he is now vice president and treasurer. Mr. Bondurant is past president of Winston-Salem Board of Realtors; Winston-Salem Property Management Association; former director North Carolina Association of Real Estate Boards.

WILLIAM W. BARENDRICK was born in Portland, Ore. He attended the University of Oregon, graduating in 1932 and has been with Norris, Beggs & Simpson since that time, serving as a vice president of that firm. He is a past president of the Oregon Association of Real Estate Boards, and has served in the capacities of vice president and treasurer of the Portland Realty Board.

WILLIAM J. PORTER, Jr., opened his own real estate office in Lansing, Michigan, at the beginning of the year having retired from the vice presidency of the Advance Realty Company with which he was associated since 1932. He received a Bachelor of Science degree in Electrical Engineering from Michigan State College. He has been active in management work, having direct supervision of the properties under his firm's management. In 1942, Mr. Porter was president of Michigan C.P.M. Chapter No. 5, and has been a member of the Institute's Admissions, Experience Exchange, and Circulation Committees. He was certified in September, 1938, as C.P.M. No. 157, later took the Kansas City Lecture Course in Real Estate Management. Mr. Porter has been active in the Lansing Board of Realtors and the Michigan Real Estate Association. He is a member of Tau Beta Pi, engineering fraternity, and Lambda Chi Alpha, national social fraternity.

C. ARMEL NUTTER was born in Milford, Delaware; received a B.S. degree from the University of Delaware in 1923; attended Temple University Law School for two years, completed course at South Jersey Law School. Worked as cashier in Bell Telephone Co. and as office manager of Horace Nixon law firm before establishing a mortgage business with his brother in 1931; is now president and treasurer of Nutter Mortgage Service. Mr. Nutter served as president of the Camden County Real Estate Board in 1936 and vice president of the New Jersey State Assoc. in 1938, 1939 and 1940. He is a member of the executive committee of the Mortgage Bankers Association of America.

THEODORE H. MAENNER was born in St. Paul, Minn. He has a B.Sc. degree from Washington University, St. Louis, Mo., 1914. In general real estate business, sales, management and insurance since 1930; president and proprietor T. H. Maenner Co. (real estate), T. H. Maenner, Inc. (ins.), City Nat. Bank Bldg. Co., City Nat. Vaults; president Court Realty Co. (apts.), Med. Arts Garage (garage bldg.). Served as Captain, Balloon school, Arcadia, Calif., during World War I. President Omaha Bd. Realtors, 1928, Neb. Bd. Realtors, 1943, Omaha Assn. Bldg. Owners and Mgrs.; NAREB vice president, north central region, 1944 and 1945; present chairman, Realtors' Washington Committee; Neb. Real Estate License Law Commission, 13 yrs. Dir. Masonic Temple Bldg.; mem. bldg. com. Masonic Boys Home; Contributed articles and editorials to *Management Journal, National Real Estate Journal* and *Buildings and Building Management.*

STEWART L. CREBS was born in Carmi, Illinois. He attended Washington and Lee University, Lexington, Virginia. Until 1918 he was employed in the banking business in Illinois after which he went to California and entered the real estate field. He operates his own business; is president of the Los Angeles CPM chapter; director of the Los Angeles Realty Board; and regional vice president of the National Institute of Real Estate Brokers.

J. WALLACE PALETOU was born in New Orleans. He was educated at St. Aloysius High School, New Orleans; and has a degree in Law from Loyola University of the South. He entered real estate business as salesman in June, 1924; licensed as a broker 1927. He is president of J. Wallace Paletou, Inc.; president, Gretna Realty Co., Inc.; president, Leicester, Inc.; president, Lynn Realty, Inc. Mr. Paletou is a member of American Institute of Real Estate Appraisers; twice past-president Louisiana Real Estate Association; has served as vice-pres. of the Real Estate Board of New Orleans.

The Professional Pledge of the

CERTIFIED PROPERTY MANAGER

I HEREBY PLEDGE MYSELF to act in strict accordance with the principles, declarations, and regulations of The Institute of Real Estate Management.

I PLEDGE MYSELF in particular to place honesty and thorough work above all else in my administration of real property; to advance myself constantly in knowledge and ability through the study of literature on real estate management, the instruction of eminent teachers, the interchange of experiences with fellow Certified Property Managers, and attendance at meetings of the Institute whenever possible; to be faithful to the personal interests of my professional brothers and to seek their counsel when in doubt of my own judgment; to render willing help to my fellow Certified Property Managers; and to give my services freely to the Institute as required or desired.

MOREOVER, I PLEDGE MYSELF to shun unwarranted personal publicity and dishonest money seeking as disgraceful to our profession; to render complete, thorough, and honest service to landlord and tenant alike regardless of monetary consideration; to strive assiduously to build goodwill for the properties under my charge and to use my best talents at all times to preserve and maintain the value of such properties; to secure the greatest possible net return to the owners of properties entrusted to my management; and to give devoted attention to the safety and comfort of tenants of these properties.

FINALLY, I PLEDGE MYSELF to cooperate in advancing and extending, by every lawful means within my power, the influence of The Institute of Real Estate Management.

The Institute of Real Estate Management
of the National Association of Real Estate Boards

The Editor's Review

A CHALLENGE TO CPMs

THE language of OPA regulations has bred the attitude of some of the enforcement agents and employees, as evidenced by their desire to interpret the controlling regulations solely to the benefit of the tenant. In their attempt to justify such an interpretation, their attitude throws the blame upon owners, managers and trade associations. It is a form of intellectual dishonesty. These regulations were not intended to work undue hardship on owners but the enforcement agents are not concerned with justice nor equity. They are not concerned with the preservation of private capital or free enterprise. They seem to delight in and enjoy the open flaunting of the basic principles of American business and its business organizations. The root of this evil is higher up than the Area Control Offices.

While the National Association of Real Estate Boards is hammering away consistently at the top, perhaps there is something we in the field can do at the bottom. Do not be misled by the loose talk and your own hope that it will soon be over. Such an approach may lull us into inactivity only to wake some morning and find we have permanent controls on our hands.

May we suggest to CPMs in areas under control that they investigate the recent amendments. Look particularly at the attitude of the local rent director regarding the increase of rent ceilings in hardship cases. Find out what the term "hardship" is interpreted to mean. If "hardship" means a lowered net return to the owner through increased taxes and operating expenses, you may be able to break the ice with a test case. Such a possibility—as difficult as it may seem to be—offers a good opportunity for CPMs to prove their value to property owners.

—O.A.K.

REFLECTIONS

ACROSS the sunlit waters of a deep Mediterranean blue northern lake came the thrilling call of the loon. The first cool, crisp fall day had come. The stately birches were already decked in light brown colors as their old leaves made ready to flutter earthward. Here and there a maple glistened in red as its leaves prepared to leave the breast that had nurtured them through the vital days of spring and the long warm summer months. The echo of the splashing jump of sporting fish in the distance wafted leisurely shoreward on a light breeze. The gentlest of ripples broke the mirroring of an azure blue sky lightly dotted with a few fleecy white clouds.

It was indeed a time for reflection as fishing lines dangled in the clear cool depths of the spring fed waters. Behind lay all the duties, the responsibilities and the problems of work, of business, of home, of citizenship. The war and reconversion were distant matters. Out of this past came thoughts of goodness, of things well done, of service given, of home and friends. The unfinished, the unachieved, the heartaches, were so hazy and dim as to be undiscernible as thoughts wandered idly to and fro or chased one another for a moment.

As the sun started to swing downward from its zenith toward the green pine trees above the sandy shore, its warmth still penetrating, here and there a dream intruded on the past,—now and then a thought of the future. What matter that the fish did not bite —this was a time for reflection, dreaming and thinking—a time for gathering strength for the busy days of the coming months, securing rest and relaxation, gaining vitality, to be used in the solution of the problems of our profession, our community, our country and our life in the days to come.

The man who feels that he is too busy for a vacation for himself, or that the business is too active to let all his employees and associates get away from their work for more than a few days at a time is missing one of the great opportunities to revitalize his organization. The problems of the future can be met and solved only by strong men and aggressive wide-awake organizations.

—F.L.C.

INTERIM PLANNING

THE challenge inherent in the nature of management of apartment houses and office buildings is competition. Many improvements in our service in the past have been prompted by competition. Today we do not have that challenge. Every foot of available space is rented, and most management offices have a long waiting list of prospective tenants.

This condition offers a temptation to the building manager to rest from his arduous labors, and to enjoy the situation that is his today. But the manager alert to the developments that already are under way in our postwar world sees in today's situation an opportunity to prepare his buildings to meet tomorrow's demands. Interim planning is his project today.

Every apartment and every office building has suffered through the war because of deferred maintenance, and with our space fully rented we are likely to postpone remodeling and modernizing until we have vacancies. Whenever it is possible to do work that can be chargeable as an operating or maintenance expense, it is highly desirable to do such work; and workmen can be found if we are resourceful enough to find them. How to find them? Work as you do when you need listings of property for sale —talk to anyone you know, and tell him you are looking for a carpenter, a painter, a plasterer. Put an ad in the local paper.

An older apartment may have its sinks 30 inches above the floor. Plan to raise them all to a height of 38 inches. The usual old, clumsy kitchen cupboards may be replaced by larger and more efficient ones. Add more shelves in closets and elsewhere. If your apartments are hot in summer, put a lattice door at the entrance to each apartment, insulate the roof, try a few of the latest flat wire screens that help to keep out the sun. If your apartment house is large, you will need a special crew to do these things; if not, your regular men can do the work.

As for office building remodeling, the opportunities are endless. The average office building radiator is old-fashioned. Replace the hall radiators with modern fin-type radiators. Think in terms of using narrow, more modern casings, whenever you have the chance. Remodel the hallway of an entire floor, as though you were planning to install air conditioning. Thus you would remove all glass side-lights and transoms, and would convert the usual wooden cornice holding the telephone wires into an open metal trough. This trough should be dropped 18 to 24 inches from the ceiling, by the way, so that later, when you do install air conditioning, there will be room for the

hall ducts, and the lowered hall ceiling will be just above the metal trough. Some glass blocks here and there will give your hall a modern appearance. Some louvers for ventilation should be spaced regularly near the ceiling, to act as duct openings when air conditioning is installed later. There should be, also, a louver at the bottom of each door.

These are just random suggestions. The reader no doubt will have many ideas of his own. It is true that there are many problems to be solved in connection with such alterations—but problems CAN BE SOLVED. By the same persistent methods of finding workmen, it is possible to find materials available. It may be that you will have to alter the plans, in order to adjust to materials that may be secured without delay, but there is always a solution that is reasonable and possible.

Careful interim planning at this time is essential, if we are to be ready for the rigors of the competition which is bound to return to its rightful place in our postwar world.

—T.H.M.

SERVICE RECORD

As many as 75 CPMs left their management business to serve in the Army, Navy, Coast Guard, and Marines during the past four years. Many members freely gave their time to assist in a civilian capacity.

We are pleased now to welcome back from all parts of the world 24 of our members who have been discharged and have returned to their management offices:

James M. Udall, Hollywood, California
E. S. Gregory, Denver, Colorado
Arnold Goldsborough, Wilmington, Delaware
Henri P. Henry, Washington, D. C.
Edward T. Offutt, Jr., Washington, D. C.
Nathan Poole, Washington, D. C.
Richard D. Barker, Jr., Jacksonville, Fla.
John F. Cary, Chicago, Illinois
Vyrl W. Levan, Ness City, Kansas
George M. Hampson, Baltimore, Maryland
Peyton B. Strobel, Baltimore, Maryland
James H. Alphen, Boston, Massachusetts
Henry M. Clark, Springfield, Massachusetts
John A. Dodds, Detroit, Michigan
William F. Baggerman, St. Louis, Missouri
George W. Seiler, Jr., East Orange, New Jersey
Hawley Jaquith, Maplewood, New Jersey
Harry Coddington, Newark, New Jersey
Leroy D. Draper, Portland, Oregon
Josiah Bunting, 2nd, Philadelphia, Pennsylvania
William I. Mirkil, Philadelphia, Pennsylvania
James C. Seiss, Philadelphia, Pennsylvania
Will H. Higgins, Memphis, Tennessee
J. Hal Brown, Amarillo, Texas

To CPM Donald O'Toole of Chicago, still serving in the Navy, we extend greetings and thanks for his interesting Christmas message written to Managing Editor, James C. Downs, Jr., from Seoul, Korea:

Christmas 1945

Dear Jim,

Here's a strange end for a CPM. As Property Custodian for the City of Seoul and Province of Kyunggi, I must locate, seize, and set up management for over 50,000 pieces of property and businesses ranging from houses to factories and department stores—in a country which has never had a real estate office or trust department. I must prepare all forms and give all training, sometimes in the Japanese language. I hope to preserve and send you some of the forms.

Sincerely yours,
Don O'Toole

THE AUTHORS
in this Issue

HARRY A. TAYLOR, *C.P.M., East Orange, New Jersey*

President of Frank H. Taylor & Son, Inc., Realtors; treasurer of the National Association of Real Estate Boards; trustee of the National Real Estate Foundation; director of the Urban Land Institute; member of the Executive Council of the Realtors' Washington Committee. Mr. Taylor was president of the Institute of Real Estate Management in 1937. He is a graduate of Colgate University and is president of the Hotel Suburban System, owners of Hotels Suburban, East Orange and Summit, New Jersey. Mr. Taylor is also president, builder and owner of Meadowbrook Village, the largest garden apartment project in the state of New Jersey. He has had over thirty years of active experience in every phase of the real estate profession.

B. L. LEFLER, *Chicago, Illinois*

A commercial property specialist of Real Estate Research Corporation.

FRANK L. LORT, *C.P.M., Denver, Colorado*

Associated with Morrison & Morrison, Inc., since 1935; seventeen years' experience in real estate management.

WILBUR C. PORTER, *Washington, D. C.*

Associated with the National Bureau of Standards since 1929 where he is an analytical chemist in the paint, varnish and bituminous material section and performs physical tests and chemical analyses on paints. Mr. Porter received his A.B. degree with a major in chemistry from Gustavus Adolphus College in 1926. He also attended the University of Minnesota and George Washington University.

THE VILLAGE GREEN

By *Harry A. Taylor, CPM*

As we enter the postwar period with its promise of unprecedented building activity it is well to study successful enterprises wherein CPMs have reached out into the field of creating management through building operations. Hereinbelow one such successful venture is described.

"I would have, then, our ordinary dwelling-houses built to last, and built to be lovely; as rich and full of pleasantness as may be within and without." [1]

MILLIONS of Americans, in the high as well as in the low income groups, will always live in apartment buildings, either from choice or from necessity. Must apartments look like institutions instead of like homes? Must they deteriorate in value as the years pass? Do multiple-housing dwellers want only a convenient place to eat and sleep—a street address? Aren't they at heart still human beings with a desire for beauty and individuality in the places they call home?

These questions harassed me from without and from within for a long time. Being one with a genuine love of American Colonial architecture, I resolved to find the solution.

One day by chance I came across Imogen B. Oakling's graphic book, *Six Historic Homesteads.* I was absorbed by it. It gave me an idea. Immediately I set out for Williamsburg, Virginia, to study the colonial restorations there, done so authentically by the Rockefeller Group.

Here was my answer, and so—"The Village Green" was conceived. I would produce a lovely garden apartment project that would be, at the same time, a credit to a Realtor builder and a lasting example of fine American Colonial architecture. Thoughts were winging into the future. Such a truly American village, typical and authentic, would, if grouped in a way to provide housing for medium income groups, make an ideal pattern for similar projects throughout the country. It would supply the best in housing—possible only through private enterprise—by those who wished to contribute permanently to the welfare of their community. That is the calling of the Realtor. He is the one who generally lives for the longest time in his city. He stays put, stays with his city and is the mainspring in its growth. Housing of the type of "The Village Green," by the use of Colonial architecture, would stimulate building and growth and, because it would provide an ideal pattern, it would promote the best and help stamp out slums.

The "storage-warehousing" of people by the public housers should be short-lived as a way of eliminating slums. This method provides shelter but it does not generate the lifeblood of true American democracy which is individuality, freedom and "pride of living." My dream was that the housing of families by private industry could do the job, could produce that "pride of living."

Historic Location

Saturated with enthusiasm, and being a practical dreamer, the sketches were begun. The location for this new prodigy of mine? It was a natural—my own plot of ground

[1] John Ruskin, *Seven Lamps of Architecture. The Lamp of Memory*

in Orange, New Jersey. This land originated from a grant by the Indians to Richard Hudnut, the Parisian perfumer, thence it became the property of but one other family, the Tilneys, before being acquired by the Taylors—my own particular branch of the Taylor tree. This spot would be "The Village Green." The ground, fronting on Orange's Main Street, is approximately 300 feet wide and 700 feet in depth. It is terraced from the street level to 35 feet at the highest elevation. This would be a great advantage because it would allow the walks to graduate naturally.

The entire surroundings are historic in character. "The Village Green" would be situated within the shadow of the Old First Church, where stands the statue of The Dispatch Rider of the American Revolution. The Church of St. John, and St. Mark's Church complete the background. From these steeples, the hourly striking of the clocks and the ringing of the deep-throated bells would provide an air of reverence. Nearby, is the point where General George Washington's army passed in the famous retreat from Long Island. Atmosphere? It breathes atmosphere.

Thus, "The Village Green" Garden Apartment project was born, took shape, and matured. The construction cost of this venture was over $500,000. The plan consists of 29 two- and one-half-story Colonial structures, arranged in seven building groups which contain 87 apartments and have a total of 314 rooms.

Early American Colonial Architecture

The buildings are reproductions and adaptations of some of the famous early American Colonial homes built in Virginia —at Mount Vernon, Yorktown and Williamsburg. These buildings have been named after their famous predecessors—the Raleigh Tavern, the Clements' House and Annex, the Charleston Colonial (with its overhanging balcony), the Reynolds Annapolis House, the Yorke House, and, standing watch like a silent sentinel over the entire little colony which spreads out below it on the gently sloping topography, is the Mount Vernon House, a replica of George Washington's historic, ancestral home with its slender white columns and stately portico.

The buildings occupy only about 20 per cent of approximately five acres of beautifully landscaped grounds, studded with many majestic old trees, all of which have been carefully preserved. Each building unit was planned so as to intertwine among these natural beauty spots. Altogether, the gracious contours of the property provide a perfect background for these Colonial garden apartments.

Access to the various buildings is provided by old-fashioned brick walks. There are authentic Colonial lamp-posts, picket fences, and an endless variety of fragrant, colorful flowers. An outstanding feature is the "Quincy Garden" and red brick stairway.

In the center of the project, reached by the Duke of Glouster Street, is the spacious Quadrangle, from where, atop a flagpole, "Old Glory" proudly flies from sunup to sundown every day. There is also the village green, and a bowling green. So Early American is the surroundings, that with little imagination, one might expect to hear the ring of the anvil from the village smithy's shop.

All the buildings have poured concrete foundations, wood framing and joists, brick exteriors, slate roofs, copper flashings, leaders and gutters, floating wall construction, metal lathe ceilings, rock wool insulation, soundproof walls between apartments, hardwood floors, and complete weather stripping. Heat is furnished by a Bell and

Gossett hot water system, having five separate hot water boilers with automatic hot water control attachments. The boilers are Fitzgibbon-type with Delco oil-burning equipment.

Eighty-Seven Modern Apartments

Each building houses from two to four families, with no "inside" or "court" apartments. A typical entrance is through an attractive Colonial doorway flanked by wrought iron railings and newel posts, above which hang old-fashioned carriage lamps on either side of the door. The dignified public hallway is tastefully decorated and features a heavy carpet and wallpaper which matches the design in the carpet. A Colonial stairway with balustrade connects with the second floor. All rooms are spacious and light, with closet facilities ample enough to satisfy any woman's heart.

The apartments are arranged in the following suites: 32, with three rooms and bath; 16, with three- and one-half rooms and bath; 24, with four rooms and bath; 12, with four- and one-half rooms and bath; and two Duplex apartments, with five rooms and bath. In addition, there is the superintendent's apartment, making a total of 87 apartments. Garages and laundries, for the convenience of the tenants, are also on the premises.

The individual apartments have every modern feature of construction and equipment. There are radio outlets, venetian blinds, recessed radiation, steel kitchen cabinets, colored tile bathrooms, Electrolux refrigeration, built-in clothes hampers, linoleum floors in the kitchens, modern table-top gas ranges, venetian mirrored medicine cabinets, and chimes instead of the customary door bells, which are at best, annoying to the average person. Rentals in these garden apartments average under $20 per room, per month.

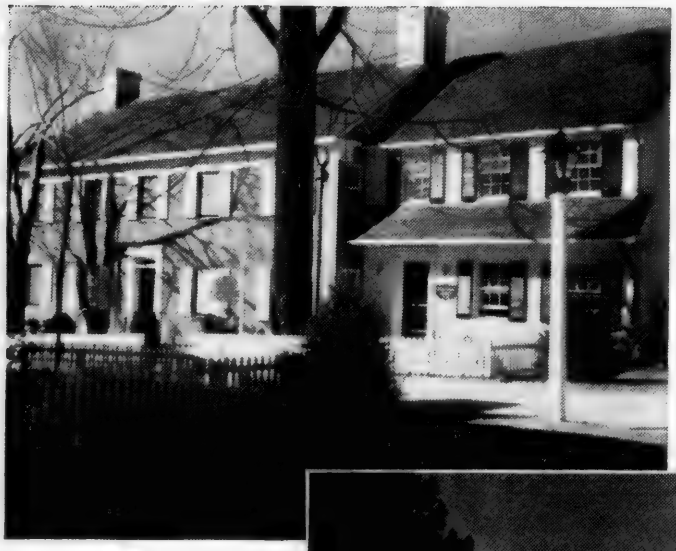
One of the important features of "The Village Green" is its strategic location. The business, shopping and amusement center of the city is only three blocks away. Churches of all denominations, as well as public and private schools, are within a stone's throw. And it is easily accessible to swift and convenient commuting to both Newark and New York.

"The Village Green" owes its unique success also to the fact that it combines all the conveniences of city apartment living with the amenities of country life—taking advantages from both, while eliminating disadvantages of each. Its attractive individuality, together with careful supervision and maintenance, have resulted in a long waiting list for these apartments, from the very beginning. My enthusiasm for this new building idea has become contagious—the tenants evince a "pride of living" attitude like the "pride of ownership" feeling, which is in the heart of every home owner. That is the result for which I have striven, so it was justifiably gratifying when the Chamber of Commerce and Civics of Orange and Maplewood publicly cited "The Village Green" as the outstanding contribution to the community development in a decade.

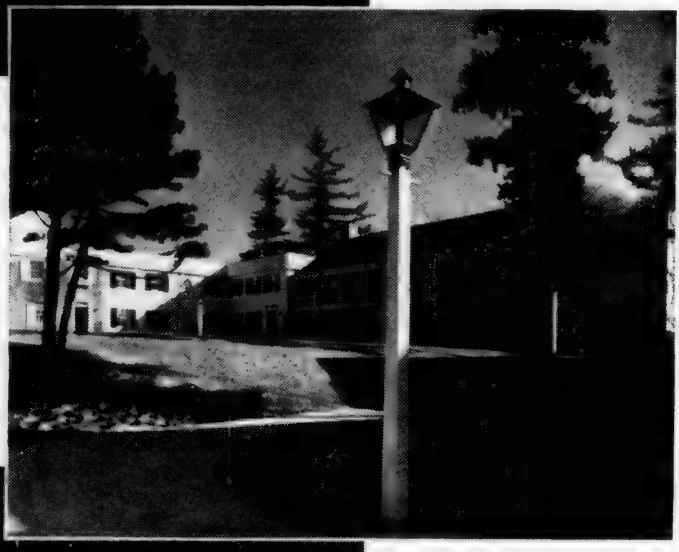
Age Will Enhance Value

Depreciation and obsolescence should, therefore, be a negative consideration, because as the years roll by, an increase of value should accrue, due to the foundation upon which the entire project was conceived and constructed.

Prior to World War II, and the conception of "The Village Green" idea, I was in Paris as the Official American Representative and Delegate at the International Conference of Surveyors and Appraisers. At the close of the Conference, I traveled intensively throughout France, England, Scotland,

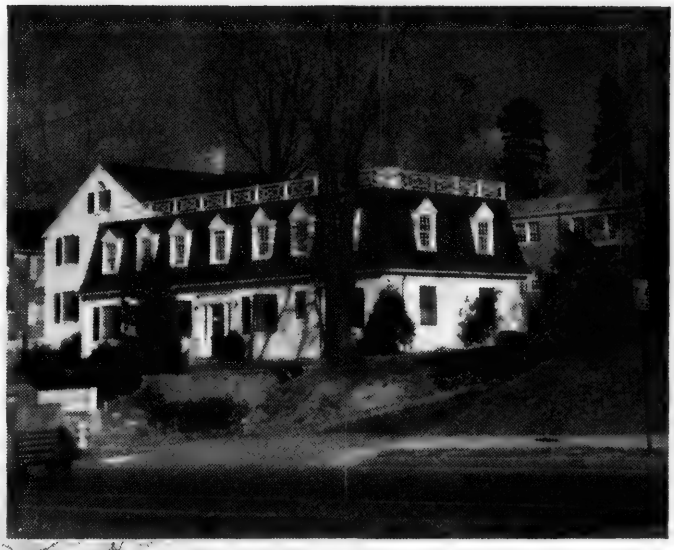


Clements' House and Annex.



The Quadrangle; showing detail of Colonial lamp posts.

Close-up of Charleston Colonial showing overhanging balcony.



Raleigh Tavern.

Charleston Colonial with upstairs overhanging balcony.

Mount Vernon house with portico, adapted from George Washington's ancestral home.

Wales, Belgium, Switzerland, Germany, Austria and Italy, studying the housing situation in those countries. Some of the houses seen, were built from 200 to 300 years ago. In cases where the structures were well located and substantially constructed, values were greater than the day they were built.

Structures 100 years or more of age were not necessarily considered old and, due to careful planning and building methods, economic life in these cases did not have the same meaning, in measuring values, that it has here in America. The axiom, that age could enhance value, was one of the basic concepts of "The Village Green."

Prototype for Other Apartment Projects

Authorities in America consider "The Village Green" to be an example of what private enterprise can accomplish without government aid or subsidy. This project, and my subsequent one—the $2,000,000 "Meadowbrook Village" Garden Apartments on a 20-acre parklike estate in Plainfield, New Jersey—were the sparks which touched off a $20,000,000 moderate rental housing program, which received national publicity. The mortgage loan department of my organization, financed construction of over $10,000,000 worth of the developments which were subsequently built from one end of New Jersey to the other, and in the New York metropolitan area.

To insure that this symbol of better housing, this motif of a true "Design for Living," will be perpetuated, I have arranged that "The Village Green" will be retained forever in the ownership of the Taylor family down through the generations to come.

"The Village Green" has received top ranking in the United States as the finest exemplification of garden apartment planning and has been the prototype for countless apartment projects throughout the country.

Hundreds of people who have visited "The Village Green" have become enthusiastic about it, all have wished others to learn of it, and have asked for its story. Housing and government officials and experts from near and far, Realtors, architects, builders, senators, three governors, and countless others have come to see it, to study it, and to enjoy it. And like a proud father who sees his son fulfill the dreams woven for him, so I have watched "The Village Green" evolve into a pattern for the nation at large to follow. Similar developments can safeguard cities from blight and, at the same time, bring new life and new pride of living into communities wherever they are created.

A Critique of Fixed Formula Methods of Pricing Office Space

By *B. L. Lefler*

One of the truly creative pieces of thinking in the management field was accomplished when the Sheridan-Karkow Formula was originally prepared. Here presented is an attempt at the refinement of some of its premises.

THE PROBLEM of determining a price for each unit of space in an office building is an ever current problem for office building management. A generation ago this problem was met largely by a process of pricing based on intuitive judgment. Management would lay out a full set of floor plans, examine each unit of space, and assign unit prices expressed either in square foot rates or dollars per month. In some buildings all space was priced at the same square foot rate. Because the intuitive method gave such poor results a number of leaders in the industry concluded a more scientific method of pricing office space than that then used by virtually all office building managers should be developed.

Formulae vs. Intuition

As a result of study and research, several fixed formulae methods of pricing office space were devised. The most publicized and widely used was the Sheridan-Karkow Formula. It represented a big step forward for the industry. Many buildings applied the formula, using it either as a method of determining actual schedules of renting prices for all units or as a method of determining minimum schedules of prices. It was found that while the use of the formula was an improvement over the old pricing method in some office buildings, it could not be applied in all cases. When the formula developed errors in glaring conflict with intuitive judgment, as it did frequently, it had to be discarded entirely or in part.

In the opinion of our organization there is no fixed formula which will determine correctly the relative rental values of all office space because a formula which determines nearly correct relative values in one office building for all units of its space, will establish substantial errors for numerous units of space in many another office building. We find this true because a fixed formula fails to recognize that the influence of variables inherent to space itself—such as depth, height, and corners—do not have the same degree or intensity of influence, positive or negative, on space values for all office buildings. Some of the reasons for this "lack of sameness" will be developed in the latter part of this article.

It is our opinion, however, that the formula method of appraising the relative values of space in any given office building is far better than the intuitive judgment method. But in using a formula, the variables must be adjusted for any given office building under study.

Office Pricing Needs Review

Currently there is an up trend in the market value of office space. Demand is at long last catching up with supply. This condition, the actual existence of a change-

over from a buyer's market to a seller's market for the commodity known as office space, is so new that it is hard for office building management to revert to proper economic thinking. Of the most obvious importance to management in the current changing market is an up-to-the-minute schedule of prices for various units of office space.

Techniques in Pricing Offices

No matter what the detailed process, there are two principal steps to follow in the actual writing of a schedule. They are: (1) determine the proper current rent level for the building; and (2) determine variations of prices up and/or down from a pivotal rate for each unit of space to differentiate properly between their rent values.

Base Rates

The determination of a current rent level as an average rate for an office building (or the establishment of a defined base rate) is a subject too large for inclusion in this article. It results from a study of economic, market, trade, and political influences common to all competitive buildings, as well as a study of occupancy, market, building character, building policies, and numerous other factors peculiar to the building itself.

The mathematical procedure used by our organization is to establish a base rate for an office building. The definition of a base rate which we have adopted in all of our assignments is the same as that used in the Sheridan-Karkow Formula, or:

> ***The Base Rate of a building is the rental value per square foot of a standard unit (actual or hypothetical for the building) assumed to be eighteen feet wide and twenty-five feet deep in the eighth floor of its important street frontage.***

By adhering to this definition of a base rate for all buildings, even though the standard unit is a hypothetical unit for most buildings, we find it possible to make many helpful comparisons between buildings.

Variations from Base Rate

Assuming that a base rate is established for an office building, the next step is to determine variations of values for each unit of space in the building up or down from the pivotal base rate. Any scientific process or formula (more correctly defined as systematic method) will establish a final index of value per square foot for each unit of office space. This index will reflect or measure the variations in rental value of each unit in relation to the rental value of the standard unit. Since there are numerous factors inherent to space itself which each add or detract from the rental value of a unit of office space in a given office building from a tenant viewpoint, the first step in calculating the relative values of units of office space in a building is to determine what factors may individually and collectively have an influence on relative values.

Factors which Affect Values

The principal factors which affect the relative values of units of office space in an office building are:

1. CORNERS
   A corner space is more valuable than adjoining straight runs of office space.
2. HEIGHT
   Space on the higher floors in a building is generally more valuable than that lower down with the possible exception of space which has street advertising value or peculiar economic values.
3. DEPTH
   Shallow space is generally more valuable than deep space.
4. EXPOSURE
   Window areas unobstructed from light, air, and view, are more valuable than those which are obstructed; and any window area is more valuable than an inside corner.

5. WINDOW SPACING

Generally, space which provides a span of 16 feet to 18 feet per typical bay of two windows is more valuable than a shorter or longer span. This is true if probable renting will develop typical one window private offices.

These factors are fundamental though their influence varies in degree from building to building and from space to space.

Although the above five enumerated characteristics are the principal ones affecting the relative values of office space in a given building, there are a number of additional factors which may have as much or more influence on value for specific units as any of the above five factors. Space which looks out over a roof is less valuable than space free of such influence. Space irregular in shape may be of less value than typical shapes. Space which has wet posts and building columns in awkward central positions is generally less valuable than space with the columns located along the corridor walls or free of any obstructions. Space having typical natural glass windows is more valuable than space having wire mesh windows. Space which is contiguous with a number of adjoining units is more valuable, from a long range appraisal viewpoint, than small units of space bottled up on both sides by building utilities such as stairways and elevator shafts. Unusual ceiling height often depreciates the value of space for the probable tenant applicant whereas for some classes of tenants an unusually high ceiling may add value. Direction of daylight north, east, south and west sometimes measurably affects values for some tenant classes. Space with unusually attractive scenic views is more valuable than space overlooking ugly surroundings. On busy thoroughfares, noise may depreciate the values of certain spaces in an office building. In some buildings proximity to passenger elevators will influence values and, of course, there are other peculiarities inherent to units of office space which affect values in varying degrees.

Application of Formula

Because the human mind cannot intuitively take into consideration the interplay of all of the influences affecting the values of different units of office space, it behooves management to set up price schedules of office space through some methodical, automatic procedures.

Let us assume you have nothing to follow in the way of published formulae or another individual's opinion in determining the relative rental values of the various units of office space in a building. You are forced to set the rent levels according to your own best judgment. Let us say your intuition indicates that space 25 feet deep and 18 feet wide facing east on the twentieth floor of a building is 10 per cent more desirable than comparable space having the same floor location and size on the tenth floor. You assume the twentieth floor unit is in fact worth 10 per cent more than the tenth floor unit, but feel, intuitively, that there is no difference in value between the tenth and the eleventh floors. Likewise, you may feel, intuitively, that there is no difference in value between the eleventh and twelfth floors—and so on up to the twentieth floor. Assuming there is a real and proper difference of 10 per cent in value between the tenth and twentieth floors (and all influences on value for the floors between are the same except for height) a scientific method will determine that, as height above street level increases between the tenth and twentieth floors 1 per cent is added to the value for each story over the tenth floor. This is the exact variation of values for height influence as detailed in the Sheridan-Karkow Formula which reads:

Add 1 per cent for each story over, or deduct 1 per cent for each of the first two stories under the

eighth floor and 2 per cent per floor under the sixth floor.

Illustration of Graduated Values

If height is the only variable in values from a base rate of $2.50 per square foot established for an X-bank of units 25 feet deep and 18 feet wide facing the principal street in a building, it would be priced by the Sheridan-Karkow Formula as follows:

Floor	*Space Index*	*Annual Rental*
2	90	$1012.50
3	92	1035.00
4	94	1057.50
5	96	1080.00
6	98	1102.50
7	99	1113.75
8	1.00	1125.00
9	1.01	1136.25
10	1.02	1147.50
11	1.03	1158.75
12	1.04	1170.00
13	1.05	1181.25
14	1.06	1192.50
15	1.07	1203.75
16	1.08	1215.00
17	1.09	1226.25
18	1.10	1237.50
19	1.11	1248.75
20	1.12	1260.00

If the appraisal premises are correct, the graduation of actual values for these units of identical size and floor location ranges from $84.37 to $105.00 per month.

Thus you have a simple application of the Sheridan-Karkow Formula. Of course, you may wish to establish actual prices by the zone method, by dropping off odd cents, or even by establishing rates to the nearest $5 per month per unit.

Very few units, if any, in a typical office building will be priced as easily as the above illustration. For the X-bank of units only one variable—the height variable—has been used. Let us assume a more normal application of the Sheridan-Karkow Formula by using a hypothetical unit in which four variables interplay to affect the values of a single unit of office space. We will again assume the building's base rate to be $2.50 per square foot per year and for evaluation purposes will describe the space as follows:

1. Height above street—twentieth floor.
   Add 1 per cent for each story over, or deduct 1 per cent for each of the first two stories under the eighth floor and 2 per cent per floor under the sixth floor.
2. Exposure—unobstructed alley.
   Unobstructed alley or comparable lot line space—85 per cent of Base Rate.
3. Depth of office—31 feet.
   Add 1.5 per cent per foot for each foot under standard depth between 25 feet and 15 feet. Deduct 2 per cent for each foot over standard depth between 25 feet and 35 feet and 1 per cent for each additional foot beyond 35 feet.
4. Column centers—20 feet wide (bay of 2 windows).
   Deduct 2½ percent for each foot over standard width (18 feet). No deduction where area is used as an open work space.

The computation of relative value index by the Sheridan-Karkow Formula for the above unit of space would be:

Evaluation Factors	*Correction*	*Index*
1. Height above street	+ 12%	1.12
2. Exposure	− 15%	0.85
3. Depth of office	− 12%	0.88
4. Column centers	−* 5%	0.95

* Unless used as open space.

SPACE INDEX

1.12 X 0.85 X 0.88 X 0.95 or 0.795872

SQUARE FOOT VALUE PER YEAR IN DOLLARS

Base Rate X Space Index or
$2.50 X 0.795872 or $1.98968

OFFICE VALUE *(Annual Rental Per Year)*

Area X annual square foot rate or
620 X $1.98968 or $1233.6016

MONTHLY RENTAL
$102.80

The Equivalent Area Concepts *

Space Index X actual area in square feet or
0.795872 X 620 or 493.44 square feet

When the values of each unit of space in a building are appraised up or down in relation to a defined base unit, the equivalent area of a unit of office space is more or less than actual area of that unit in the same proportion that the index of value for that unit is more or less than the index of value for the base unit.

Appraisal processes and economic analyses for buildings are facilitated in many important ways by converting all actual areas in a building into equivalent areas using as a base unit the same defined unit for all buildings under analysis. The equivalent area concept is also helpful in setting up building records to determine actual returns on building investment at varying rates for various rented areas.

Space Variables Not Fixed

The above illustrations assume there are a limited number of principal factors influencing values and, further, that the variables are *correctly* determinable by the Sheridan-Karkow Formula. We have, in effect, used parts of this formula without change for some office buildings. The simple criterion of reliability of any formula, however, is to so determine its variable factors that the resulting index for each unit of space accurately measures real values from actual or potential tenancy viewpoint. Note the words *actual or potential tenancy*. Tenancy, itself, is a market variable (for the commodity office space) rendering a big influence on space evaluation variables between different office buildings. One building may be predominately suited to fire insurance agents, another to retail shops, another to small law offices while, theoretically, at least, another may be equally well suited for all. The type of space preferred by different classes of tenants varies widely. And so we find that the intensity of each of a defined list of value variables which influence relative values of office space may be different in one building from those in another because of the tenancy market. It is observed, therefore, that the variables used in a formula to appraise the relative values of office space must be appraised and properly weighed or the formula method cannot render a good result. Actual practice indicates a fixed formula will be in error most of the time because most office buildings possess appreciable peculiarities not common to other buildings.

Each of the few following illustrations indicate specific conditions encountered wherein space evaluation variables cannot take a fixed form for all office buildings.

THE EXPOSURE FACTOR

By this factor we refer generally to exposure which might be a principal street, an alley or lot line, a court or interior light well. In many office buildings there is a great variation in the degree to which office space is obstructed from sunlight, air and view. A part of the Sheridan-Karkow Formula gives a space facing an unobstructed alley or comparable lot line a value 85 per cent of the rate for a like space enjoying a street frontage. In some buildings space facing an alley or a lot line but enjoying unobstructed view is as valuable and occasionally more valuable, from the renter's viewpoint, than comparable space in the same building which faces the principal street. It is impossible for any fixed formula to evaluate properly space situated in light wells, unless the formula is extremely complex.

*NOTE: Equivalent Area X Base Rate equals the same as Actual Area X Actual Rate.
$493.44 X 2.50 = 620 X 198.968
1233.60 = 1233.60

Depth of Office

The Sheridan-Karkow Formula provides an added 1.5 per cent per foot for each foot under standard depth between 25 feet and 15 feet, a deduction of 2 per cent for each foot over standard depth between 25 feet and 35 feet depth, and a deduction of 1 per cent for each additional foot beyond 35 feet. This part of the formula, in our opinion, is in excellent balance for some buildings if most of the tenants require a *more than average* number of private offices. The rate at which space loses value as depth increases must be related to the requirements in office space layout of the existing type of tenants in the building and to the requirements of the class of applicants who are likely to seek out the building as a business home.

A typical tenant operating a retail shop in upper floor space of a shops building who uses 3,000 sq. ft. of space entirely for retail display purposes would prefer remaining in an area 50 feet deep by 60 feet wide than to move to an area in the same building 15 feet deep by 200 feet wide stretching as a ribbon along side windows. It can be argued that obviously this shallow space should not be rented to such a tenant but to a tenant or number of tenants who can obtain the full value attributable to shallow space. This argument does not obscure the fact that to some varying degree one office building may lose less in space value than another as depth increases. If the best tenant market for a given type of building is predominately for deep space as compared to shallow space, then the loss of value as depth increases will not be the same for such a building as it may be for some entirely different building. In fact, it is not unusual to find 25 foot or 30 foot depths more valuable per square foot in a specific building than 20 foot depths. It is not infrequent that an AAA office building successfully catering to typical larger prestige commercial tenants requiring 2,500 to 6,000 square feet or more, finds its probable desired applicant or actual tenant preferring deep space to shallow space. Many specific classes of larger (quality) tenants, particularly in a strong seller's market, can afford and will pay more net rental per square foot than will the smaller class of tenancy for the same building. For any building the depth variable should be set only after a market analysis. Such an analysis may indicate a deduction of 1 per cent per additional foot instead of 2 per cent.

Corners

The Sheridan-Karkow Formula provides that for street intersections 15 per cent should be added to the rate for that area of the corner defined as area from outside walls to nearest interior column, or arbitrary area of 450 square feet. Building agents have often failed to interpret properly this part of the formula. Some corner areas, more than others, should be stepped up considerably more in value as compared with adjoining space not on a corner. Assume a large office building containing an interior light well with, 40,000 square feet to a floor and all of the outside space 30 feet deep. This kind of a building would have four outside corners per floor, each corner contiguous with several thousand square feet on either side of the corner unit. In such a case proper renting technique involves reserving the corner area for large tenant occupancy rather than renting it to a small tenant. The renting of a corner along with several adjoining units in such a building may result in a chief executive occupying a corner office. A company which employs an executive at $25,000 to $100,000 normally pays more for the advantages of a choice office for him than would a company whose executive is in a $5,000 per year class. This

building may enjoy a greater than normal step-up in value for each of its corner areas inasmuch as they are comparatively scarce in that building.

Consider the effective influence of a corner area which has contiguous space 40 feet deep on either side as compared with a corner having only 20 feet on each side. The corner area for the deeper space may be considered to contain 1600 square feet whereas the area of the more shallow corner space, would contain only 400 square feet. In the former case the corner influence has a beneficial effect on a greater amount of square footage than does the corner influence of the shallow space. The advantages of better light and cross ventilation favorably influence more area in the larger corner.

Market Influence

Unlike most commodities, the supply of the commodity office space cannot be adjusted easily and quickly to demand. This fact imposes the necessity of a market analysis different in emphasis than a market analysis for most consumer goods products. During weak markets (with occupancy at a low level for most buildings) larger tenants have often obtained rentals well below even the weak market level. Their bargaining position at such times is favorable. During periods of acute shortage of office space these same larger tenants lose their more than average favorable bargaining position. When average occupancy of office buildings reaches 97 or 99 per cent these larger office space buyers find there is no supply of office space from which to choose and must remain at their present location. The smaller tenant still may find some degree of choice at the 97 or 99 per cent average occupancy level and he is in a better bargaining position.

Since the larger tenant using 5,000 square feet or more often finds deeper space better than shallow space, it is observed that market conditions have some influence on valuation processes for depth and larger areas.

Technological Change

Progress in air conditioning, ventilation and lighting of offices all act to reduce the importance of such space evaluation factors as height above street, exposure, and space depth. These technological improvements tend to make each square foot good and usable. There is some tendency to overrate daylight for top quality buildings in AAA locations where a higher proportion of real values are not inherent in the space itself but where the prestige and desirability of the building and its location have a larger than normal influence on values.

Costs of Tenant Installation, Maintenance and Service

A schedule of appraised relative rental values for units of office space has little meaning unless "relative rental values" is clearly defined. Many buildings have what is called a unit rate for each type of space. The unit rate may contemplate an allowance of up to 5 per cent of rental for alteration costs, any additional costs to be paid in advance by the tenant or compensated for in the form of increased rental.

This unit rate plus method of determining actual rental rate is good renting economics as some tenants cost much more per square foot of space occupied than others to install, maintain and service. Doctors and dentists cost more than large fire insurance agencies. In fact the rental charge per square foot for some doctors and dentists may need to be double the charge for certain other tenants in order to return the same net revenue to the building on identical space. Generally, small tenants cost

more than large tenants. Shallow spaces cost more than deep spaces. Tenants requiring many private offices cost more than those which require none. Small law firms cost more than the average tenant.

Proper analysis will recognize that "correct rental charges" and "relative rental values" are not at all the same. The correct rental charge must be adjusted up from schedule if costs of tenant installation, tenant maintenance, and tenant service are up from average. Otherwise what appears to be a good rate may be insufficient.

Balanced Rentals Now Attainable

Currently pricing of space is almost entirely a matter of pricing for renewal of leases. Fortunately now, as contrasted to ten years ago, management can effectively do something about establishing equitable rental rate ratios. Unfortunately, however, if some units are priced too low as compared with other units, the truth of that fact may be hard to ascertain. An increased rental must be assessed in order to be received.

Conclusion

This article is in no way intended to advocate the elimination of the use of the formula method of pricing office space. Our organization, as a matter of fact, heartily supports the use of formulae in the office building field. For too long, however, building managers, through lack of time or knowledge, have fallen back on the use of a single fixed formula which at best only approximates the value relationships which exist in any given property. Those buildings which have used this formula without alteration of any kind can only have arrived at a truly accurate pricing structure through a considerable coincidence—a coincidence in the similarity between the property priced and the hypothetical property which the originators of the formula had in mind.

While we advocate strongly the use of formulae, we do not by any means discount the value of judgment and of intuitive reasoning as factors necessary in the formation of workable rent schedules. No one mind, however, as we have demonstrated, can retain all of the variables which must be considered and apply them accurately to a pricing problem without the assistance of some automatic tool. There is no place for "judgment," therefore, in the direct evaluation of individual offices. The place for judgment and intuition in the pricing process *is in the choice and modification of the formula to be used* for the property under appraisal. Even after the proper formula has been selected there is still a further important place for judgment in the examination of the rent schedule which the formula develops, as well as a need for sensitivity to the empirical application of the rentals during the renting process. Many times it is only after thorough testing and after a period of trial that the final correct formula can be chosen. The important thing to bear in mind is that no one can price office space correctly in a large property without the use of some type of formula, and it is only in rare instances that a formula can be applied without exercise of considerable sales judgment and pricing "intuition." The place for the use of judgment, however, is in the modification of the formula to be used and in the assessment of its success.

A MODERN REAL ESTATE OFFICE

By *Frank L. Lort, CPM*

The recent modernization of the office of Morrison & Morrison, Inc., in Denver, Colorado, offers an interesting problem involving both growth and progress. The story is presented here as the third of a series of articles which describe various types of management offices.

IN 1928 two brothers, George R. Morrison, CPM, President of the Institute of Real Estate Management in 1943, and Robert A. Morrison, CPM, combined their real estate experience and operations under the name of Morrison & Morrison, Inc. At that time they conducted their business from a small office in one of the downtown office buildings. In 1931, due to an urgent need for additional space, they moved to a ground floor location at 1650 Broadway. This store, 20 feet wide and 54 feet deep, was located within one block of the three largest hotels of the city and on the eastern edge of the business district where parking space is more accessible. The office force consisted of two employees.

During the next 14 years the office was remodeled four times—once to accommodate the addition of an insurance department, and later for the addition of a real estate loan department. It was twice again necessary to expand the working area, the last time by the construction of a fireproof balcony. By the early part of this year it was apparent that it would be necessary either to move to larger quarters or to expand the present office. In April it was possible to lease the adjoining store building, and shortly thereafter remodeling was commenced and proceeded as material and labor were available.

It was the opinion of our office that a remodeling job undertaken by a property management firm for its own use should, without question, be outstanding in efficiency, attractiveness, simplicity and appeal. We have made a very serious and conscientious effort to achieve these four aims. The very simplicity of the interior decorations and fixtures have created much favorable comment. The walls throughout are of pastel green flat oil paint; the ceiling is finished in a very soft ivory. The overall effect is pleasing and harmonious.

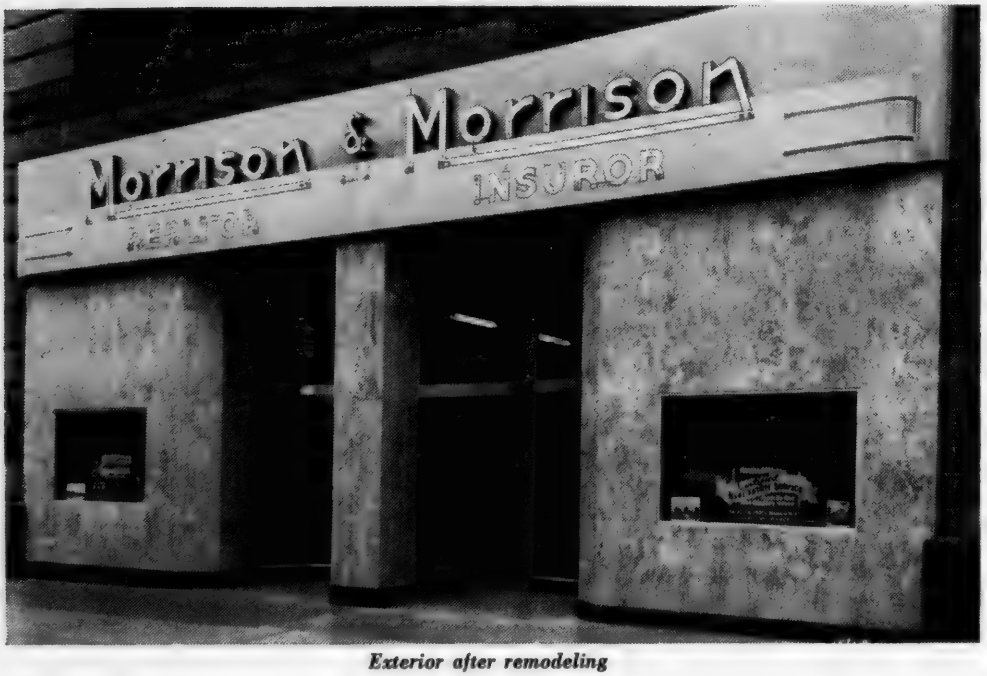
Liability Makes Effective Exterior

The alterations required the construction of a new front, and in keeping with our general policy of distinctiveness without flashiness it was decided to use polished travertine. The results obtained from this treatment are most satisfactory in all respects. The front has dignity, appeal, and is unquestionably outstanding. Unfortunately there was a row of five bearing wall supporting pillars between the two stores. This presented a problem in devising and in planning an attractive front. With the help of our architects we worked out a recessed entryway, mostly of plate glass which runs to within six inches of the floor. It is our opinion that we have capitalized upon a liability and, because of the supporting posts in front, have made a more attractive entrance than we otherwise would have obtained.

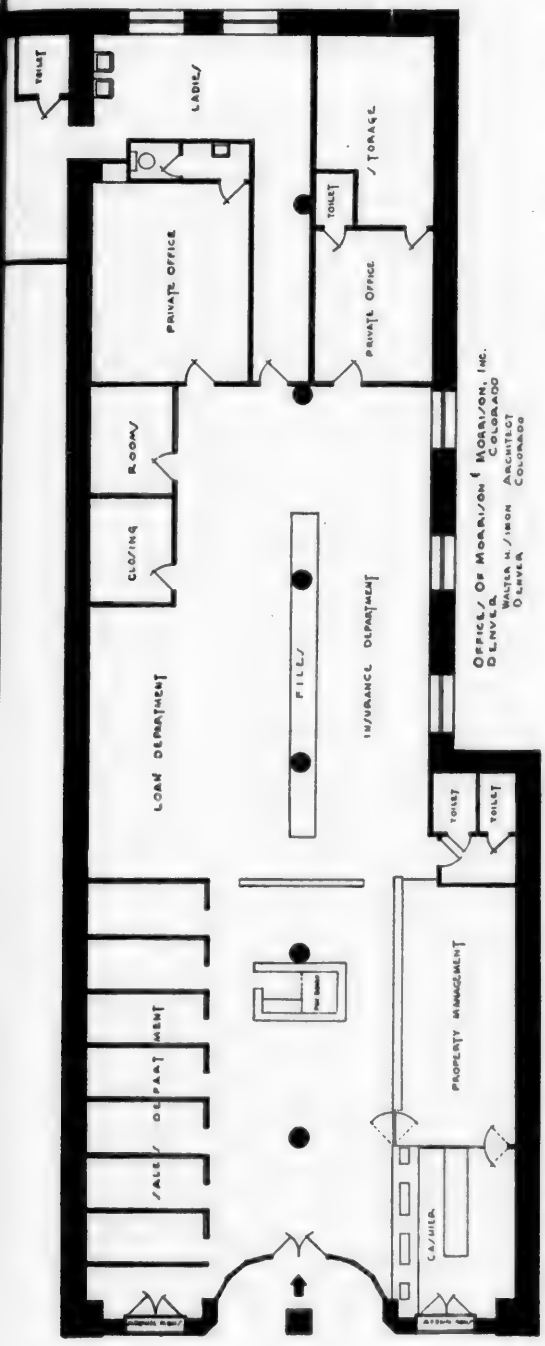
No Desk Lamps

Before describing the interior layout, the matter of lighting and floor treatment should be discussed. Our experience indi-

Exterior of office before remodeling



Exterior after remodeling



cates that in these two respects major errors usually are made in remodeling. To meet our problem we have installed 23 fixtures, 19 consisting of two 100-watt "3500 white" fluorescent tubes, and four containing four 40-watt "3500 white" fluorescent tubes. This gives better than 25-foot candle power at each desk. There is no need for desk lamps and efficiency has been stepped up by this improved lighting. We decided upon "Marbelette" as a floor covering for the entire office except in the cashier department, the management department and the private offices. There are several varieties of this type of covering for use over wood floors. They all have in common the use of magnesite instead of cement. We have found this floor very satisfactory because of its flexibility, the ease with which it is kept clean, and the fact that in wet weather it does not become slippery. The employees in the office have found it very agreeable to stand and work upon.

Completely new office fixtures were designed and purchased. The wood is walnut which has been finished with five coats of shellac, rubbed between each coat, and two finishing coats of wax. All counter tops are brown linoleum with wax finish.

Interior Layout

Upon entering the office one steps into the lobby, 18 feet by 35 feet, in which the information desk and switchboard are placed. (See floor plan.) Immediately to the right is a cashier cage with three open wickets. The detail of the cashier cage was given a great deal of thought and the efficiency and effectiveness of its operation are of great satisfaction to us. Directly behind the cashier cage is the property management department. In this department the floor has been raised approximately eight inches and the desks placed against the counter, making it possible for the property manage-

President's Office

ment men to service tenants at the counter while remaining seated at their desks. We have found that this type of operation greatly reduces the amount of time necessary to handle each tenant or prospective tenant.

Running across the rear of the lobby of the office is a counter which is used both by the insurance department and the loan department. A fixture which is built around the supporting posts, before mentioned, provides file space for 16 counter-height legal-size files for the loan department.

Two private offices are located at the rear. The president's office, behind the loan department, is 14 feet by 19 feet. It is furnished with dark red leather upholstered chairs and a large walnut desk and table. The floor is covered with powder blue chenille carpeting. There is a three-foot walnut wainscoting, and the walls are blue-gray with concealed cove lighting. The lights and air conditioner are controlled from the desk. In addition to the two private offices there are two closing, or conference rooms, as indicated in the floor plan.

We considered it very important to provide a suitable lounge room for lady employees in the office. It is furnished with a comfortable overstuffed davenport and chair and contains a powder bar, three feet by six feet, over which is a full-length mirror with fluorescent light above.

Unusual Sales Offices

Located off the lobby and directly in front of the loan department are eight private offices for salesmen. These offices are six feet by ten feet and are walnut to counter height with plate glass above. So far as we know, ours is the first sales department to be treated in this manner and we find it exceedingly satisfactory. The salesman is able to keep in touch with his customers who may come into the office. In addition, a customer when making a loan payment can very conveniently step over to say "hello" to the salesman. Thus it is possible for a salesman to maintain a more active contact with the individuals to whom he has sold property, and we have found it very beneficial to the office.

Making major alterations and remodeling while continuing to do business is, under the most favorable circumstances, a very trying and unsatisfactory experience. Under today's conditions, with shortages of material and labor, the hardships and inconveniences are magnified. Having gone through a most unpleasant experience, we feel a deep sense of satisfaction that it has proved worth while, and the results obtained fully meet our anticipations. It is our hope, therefore, that this brief description will be a stimulus for the improvement in efficiency and appearance of other management offices throughout the United States.

Interior view, showing salesmen's private offices

PAINTING STEEL

By *Wilbur C. Porter*

THE following report is a reprint of one of a series of 102 papers which have been issued by the National Bureau of Standards of the United States Department of Commerce under the title "Building Materials and Structures Reports." It is reproduced here by special permission. The report covers the investigation made by that Bureau of various pretreatments and paints for protecting plain and galvanized steel surfaces against corrosion. It describes the relative durability of primingcoat and topcoat paints for plain and galvanized steel surfaces when subjected to certain accelerated laboratory and outdoor exposure tests.

We are taking the opportunity to present this study, first, because it is extremely timely in that several new techniques have been discovered which will be of importance in protecting what should be a greatly increased use of steel and galvanized metal in new building and reconstruction during the coming year and, second, because it is an excellent example of the technical work of interest to property managers being undertaken regularly by the National Bureau of Standards. We commend this report highly to those who have maintenance responsibility in regard to modern buildings or older steel structures.

ABSTRACT

More than 60 priming paints for plain and galvanized steel surfaces were tested. Because some of these primings were duplicates or near duplicates and others were considered unsuitable, only 41 have been selected for this report. Accelerated laboratory and outdoor exposure tests were employed to determine the relative protective value of these primings when applied to treated and untreated galvanized and plain steel panels. Particularly effective protection against corrosion was observed when primings of the synthetic resin zinc chromate type were used over a phosphate-treated surface. Special attention was given to the effect of pretreating new galvanized steel before painting. More than 2,000 galvanized and plain steel panels were prepared for exposure in the various tests. The relative durability to outdoor exposure of 15 topcoat paints is also discussed.

I. Introduction

As part of the general research program of the National Bureau of Standards on building materials and structures, a study has been made of the surface treatment and painting of steel for protection against corrosion. The results obtained in the early phases of the work have been published as two Building Materials and Structures Reports, BMS8 and BMS44.[1] This paper concludes the investigation with a description of the results of the tests on priming-coat and topcoat paints.

In the painting of steel structures, durability of the paint film is a recognized factor in preventing corrosion. Climatic conditions, the composition and preparation of the metal, the adherence and composition of the paint coating, as well as the conditions under which the coating was applied, influence the serviceability of the paint film. Nearly all steel structures are painted either for protection or decorative purposes, and

[1] BMS8. Rolla E. Pollard and Wilbur C. Porter, Methods of investigation of surface treatment for corrosion protection of steel.

BMS44. Rolla E. Pollard and Wilbur C. Porter, Surface Treatment of Steel Prior to Painting.

the paint coating must remain as a continuous film over the metal if it is to fulfill these functions properly.

For practical purposes, corrosion tests are made to ascertain which of a number of processes or coatings will protect the metal most completely. It is clear that no laboratory test can fully take the place of a long-period, full-scale service test, and it is not to be expected that these tests, reduced in scale to economize space and increased in intensity to save time, will produce results directly measurable in terms of so many years of actual service. However, it is believed that comparisons can be made from the results of accelerated tests which will indicate to some degree the relative protective value of paint systems. The conclusions in this paper are drawn on the basis of factors affected by conditions peculiar to the individual test, and the results of the outdoor exposure tests may not correlate those in other parts of the country.

II. Priming-Coat Paints

The fundamental factors governing the retention of paint film integrity on metal may be expressed in a few essential requirements; namely, permanent adhesion, distensibility, water resistance, chemical inertness, and the presence of a rust-inhibitor. The extent to which these characteristics are manifested in paint coatings determines their efficacy for protecting metal against corrosion. The advent of synthetic resins and the proper formulation of these for use in paint vehicles has made possible the improvement of some of these properties.

A synthetic resin may be defined as a resin made by synthesis from nonresinous organic compounds. The alkyd resins, used principally in paints, varnishes, and lacquers, are a group of condensation products synthesized by reacting polyhydric alcohols, such as glycerine and the glycols, with dibasic organic acids, such as phthalic, maleic, succinic, and sebacic. The condensation product is almost always modified to give properties to the resin desirable or essential to the specific application contemplated. The modifying agent may be a drying, semidrying, or nondrying oil; the fatty acid of an oil; a natural resin, such as rosin; a synthetic resin of the phenolic group or of the urea-formaldehyde type. Good adhesion, color and gloss retention, durability, toughness, and flexibility are some of the outstanding characteristics imparted to primings containing properly formulated alkyd vehicles. They are exceptionally well adapted for the baking type of priming and enamel.

The phenolic resins used in paints, varnishes, and other surface coatings are usually oil-soluble types. Modified phenolic resins are phenol-formaldehyde condensation products rendered oil soluble by chemical combination or by physical dispersion in other materials, such as rosin and copal. Unmodified or 100-percent soluble phenolic resins are condensation products made from tar acids other than simple phenol, which are themselves soluble in drying oils and thinners. The unmodified resins are extensively used in long-oil chinawood varnishes, to which they impart greater drying speed, durability, and resistance to alkalis and gases. The modified types impart the same properties to tung-oil varnishes but to a lesser extent. In addition, they possess considerable hardness and gloss. In general, the phenolic vehicles have very good water, acid, and alkali resistance. The long-oil unmodified types are especially useful in the formulation of exterior marine finishes, which require superior resistance to severe water and weathering conditions.

Oil and phenol modified alkyds are very versatile and combine many of the qualities needed to produce durable paints for general interior and exterior use on metal.

More than 60 priming paints for steel and galvanized surfaces were tested in this investigation. Because some of these primings were duplicates or near duplicates and others were considered unsuitable, only 41 have been included in this report. The primings have been rated in groups according to their protective value, which in this paper means the extent to which the paint coatings fulfill the function of protecting the underlying metal. The ratings are discussed under the results of the tests and for convenience are included in table 1. It gives the designation, description, and group ratings of these primings.

III. Painting Plain Steel Surfaces

1. Preparation of the Surface

Several theories have been advanced to explain the mechanism of corrosion, but the electrochemical theory is now generally accepted as the best explanation of most types of corrosion. The ordinary metallic surface is not truly homogeneous, chemically and physically, and points of potential difference are sure to exist. In the presence of moisture containing small amounts of dissolved salts, which serve as the electrolyte, a tiny electrolytic cell is formed between anodic and cathodic areas. Under proper conditions, an electric current flows through the electrolyte from the anode to the cathode and from the cathode back to the anode through the metal itself, thus completing the circuit. This electrochemical action causes the metal to dissolve at the anode and hydrogen to be evolved from the electrolyte at the cathode. Obviously, if this action continues, the metal at the anodic areas will gradually disintegrate. The complete absence of moisture precludes the possibility of corrosion by electrochemical action. In other words, the presence of moisture to form an electrolytic medium through which an electric current can flow is neces-

Table 1.—*Designation, description, and group ratings of the priming-coats*

Designation	Description of primings	Group rating[1]		
		Plain steel (pickled in HCl)	Galvanized steel	
			Untreated	Phosphate treated
1	Red lead paint. Federal Specification TT-R-191a, Type I, Grade B Dry red lead ..... 20 pounds. Raw linseed oil ..... 5 pints. Turpentine ..... 2 gills. Liquid drier ..... 2 gills. 25.2 pounds per gallon.	2	2	1
2	Blue lead paint Blue lead paste in oil ... 100 pounds. Raw linseed oil ..... 2⅔ gallons. Turpentine ..... 1¼ gallons. Liquid drier ..... 1 quart. 18.2 pounds per gallon.	3	3	2
3	International orange paint. Federal Specification TT-P-59. Type A. 18.0 pounds per gallon	2	2	1
4	Metallic lead and carbon paint 38 percent pigment by weight: 90 percent metallic lead. 10 percent carbon black. 62 percent vehicle by weight, oil and phenol modified glyceryl phthalate resin varnish: 56 percent nonvolatile. 44 percent volatile.	3	2	1
5a	Iron oxide-zinc chromate metal priming. Post Office Department Specification, revised as of April 7, 1937	1	3	1
6	Aluminum paint. 2 pounds aluminum powder Federal Specification TT-A-476, Type A, per gallon of varnish Federal Spec. TT-V-81	....	2	1
7	Quick-drying red lead in alkyd (oil type) vehicle. 19.4 pounds per gallon	2	2	1
8	Zinc chromate priming. Navy Aeronautical Specification P-27b, June 1, 1937	1	2	1
9	Zinc dust - zinc - oxide - glyceryl phthalate paint. Federal Specification TT-P-641. Type II, Class A	....	1	1
11	Asphalt varnish, Federal Specification TT-V-51	4	3	3
12	Metallic lead and carbon in phenolic resin vehicle	....	2	1
13	Metallic lead in phenolic resin vehicle	....	3	3
14	Graphite in linseed oil paint	4	3	2
15	Metallic lead in phenolic resin vehicle	3	3	...
17	Metallic lead-blue lead in phenolic resin vehicle 52 percent metallic lead in pigment. 48 percent blue lead in pigment.	3	3	...
21	Zinc dust-zinc oxide priming 68 percent pigment by weight: 60 percent zinc dust. 26 percent zinc oxide. 11 percent siliceous matter. 3 percent white lead. 32 percent vehicle-vegetable oil and spar varnish.	....	2	2
23	Zinc dust-zinc oxide priming 76 percent pigment by weight: 35 percent zinc dust. 65 percent zinc oxide. 24 percent vehicle-vegetable oil and spar varnish.	....	3	2

See footnote at end of table.

TABLE 1. (Cont.)—*Designation, description, and group ratings of the priming-coats*

Designation	Description of primings	Group rating[1]		
		Plain steel (pickled in HCl)	Galvanized steel	
			Untreated	Phosphate treated
24	Gray paint for galvanized steel	....	3	2
	56 percent pigment by weight:			
	59 percent zinc oxide.			
	9 percent white lead.			
	29 percent siliceous matter.			
	Carbon tinting material present.			
	44 percent vehicle-vegetable oil and thinner.			
25	Natural rubber clear priming. (Aluminum paint in natural rubber vehicle. Topcoat for number 25)	4	3	2
27	Pigmented natural rubber priming. (Aluminum paint in natural rubber vehicle. Topcoat for number 27)	4	3	2
29	Iron oxide-zinc chromate priming	1	3	...
	52 percent pigment by weight:			
	50 percent iron oxide (85% Fe_2O_3).			
	25 percent zinc chromate.			
	15 percent asbestine.			
	10 percent silica.			
	48 percent vehicle by weight:			
	Phenol-formaldehyde resin-chinawood oil varnish.			
30	Zinc chromatic priming	1	3	1
	45 percent pigment by weight:			
	80 percent zinc chromate.			
	20 percent magnesium silicate.			
	55 percent vehicle by weight:			
	Phenol-formaldehyde resin-chinawood oil varnish.			
31	Zinc chromate priming	1	3	1
	45 percent pigment by weight:			
	80 percent zinc chromate.			
	20 percent magnesium silicate.			
	55 percent vehicle by weight:			
	Para phenyl phenol-formaldehyde resin.			
	Oil is 50 percent linseed oil and 50 percent chinawood oil.			
32	Zinc chromate-aluminum priming. Similar to No. 31 with the addition of one pound of aluminum powder per gallon of primer	1	3	1
33	Zinc dust-zinc-oxide priming	....	3	1
	60 percent pigment by weight:			
	80 percent zinc dust.			
	20 percent zinc oxide.			
	40 percent vehicle by weight:			
	V-10 Naval Aircraft Specification Spar Varnish.			
34	Zinc dust-zinc oxide-linseed oil paint. Federal Specification TT-P-641, Type I, Class B	3	1	1
35	Zinc dust-zinc oxide-phenolic resin paint. Federal Specification TT-P-641. Type III, Class B	3	2	1
36	Zinc dust-zinc oxide-iron oxide paint	2	2	1
	60 percent pigment by weight:			
	50 percent zinc dust.			
	20 percent zinc oxide.			
	30 percent iron oxide.			
	40 percent vehicle by weight:			
	Phenolic resin-chinawood oil varnish.			

See footnote at end of table.

TABLE 1. (Cont.)—*Designation, description, and group ratings of the priming-coats*

Designation	Description of primings	Group rating[1]		
		Plain steel (pickled in HCl)	Galvanized steel	
			Untreated	Phosphate treated
37	Chlorinated rubber paint pigmented with 27 percent aluminum, 41 percent zinc chromate, 14 percent black iron oxide and 18 percent carbon black	2	3	2
38	Chlorinated rubber paint pigmented with 56 percent zinc chromate, 19 percent black iron oxide, and 25 percent carbon black	2	3	2
39	Chlorinated rubber paint pigmented with 88 percent metallic lead, 7 percent zinc chromate, 2 percent black iron oxide, and 3 percent carbon black	3	3	2
54	Red chromate priming	2	...	...
	43 percent pigment by weight:			
	32 percent lead chromate.			
	10 percent lead sulfate.			
	37 percent iron oxide.			
	21 percent siliceous matter.			
	57 percent spar varnish vehicle by weight.			
56	Iron oxide-zinc chromatic priming	1	...	...
	48 percent pigment by weight:			
	41 percent zinc chromate.			
	38 percent iron oxide.			
	21 percent siliceous material.			
	52 percent vehicle by weight:			
	Oil and phenol modified glyceryl phthalate resin varnish.			
	60 percent nonvolatile.			
	40 percent volatile.			
60	Iron oxide-zinc oxide paint	3	2	2
	60 percent pigment by weight:			
	59 percent metallic brown (68% Fe_2O_3).			
	18 percent Spanish iron oxide (86% Fe_2O_3).			
	12 percent zinc oxide.			
	11 percent asbestine.			
	40 percent vehicle by weight:			
	Long oil spar varnish.			
	65 percent nonvolatile.			
	35 percent volatile.			
61	Zinc dust-zinc oxide-linseed oil paint	....	1	1
	79 percent pigment by weight:			
	78 percent zinc dust.			
	20 percent zinc oxide.			
	2 percent litharge.			
	21 percent vehicle by weight:			
	Linseed oil, thinner and drier.			
	90 percent nonvolatile.			
	10 percent volatile.			
68	Aluminum-zinc dust paint	3	1	...
	30 percent pigment by weight:			
	58 percent zinc dust.			
	22 percent aluminum.			
	8 percent zinc oxide.			
	12 percent inert pigment.			
	70 percent vehicle by weight:			
	Treated oils and natural resin varnish.			
	64 percent nonvolatile.			
	36 percent volatile.			
74	Metallic lead in alkyd resin varnish	3	2	...
	39 percent pigment by weight.			
	61 percent vehicle by weight:			
	46 percent nonvolatile containing			

See footnote at end of table.

Table 1. (Cont.)—*Designation, description, and group ratings of the priming-coats*

Designation	Description of primings	Group rating[1]		
		Plain steel (pickled in HCl)	Galvanized steel	
			Untreated	Phosphate treated
	Metallic lead in alkyd resin varnish (contd.) 38 percent of glyceryl phthalate. 54 percent volatile.			
75	Metallic lead-red lead in alkyd resin varnish 51 percent pigment by weight: 75 percent metallic lead. 25 percent red lead. 49 percent vehicle by weight (same as 74).	3	...	...
77	Iron oxide-zinc chromat in alkyde resin varnish 38 percent pigment by weight: 67 percent spanish iron oxide (84% Fe_2O_3). 33 percent zinc chromate. 62 percent vehicle by weight: 45 percent nonvolatile containing 44 percent glyceryl phthalate. 55 percent volatile.	1	...	...
82	Blue lead in phenolic resin varnish 72 percent pigment by weight. 28 percent vehicle by weight.	3	...	...
83	Blue lead in ester gum modified alkyd resin varnish 72 percent pigment by weight. 28 percent vehicle by weight.	3	...	...

[1] 1 is the best group; 2, the second best group, etc.

sary for corrosion to take place. Accepting this theory, it is evident that the less water permitted to come in direct contact with the metal, the less corrosion will take place. Since no paint film today is absolutely impervious to moisture, the need for a pigment possessing sufficient rust inhibitive power is obvious. The flow of electric currents between the anodic and cathodic areas can be retarded by using chemical treatments that form a nonmetallic coating on the metal.

The fundamental requisite of a priming coat paint for any metal surface is that it adheres permanently to the metal. This important requirement should be kept in mind constantly in preparing the surface, and certain precautions should be taken to insure the best performance of the priming coat. All steel surfaces to be painted should be thoroughly cleaned free of grease, rust, loose mill scale, dirt, and other foreign materials that might cause inferior bonding of the priming. Usually this may be accomplished by the use of scrapers, wire brushes, pickling, sandblast, mineral spirits, or other methods that produce a satisfactory surface. In addition to having a clean surface, it has also been found beneficial to treat the metal with certain chemical solutions. The main objective of these chemical treatments is to form a nonmetallic coating, intimately attached to the metal, which retards corrosion and provides greater adhesion of applied paints. Building Materials and Structures Report BMS44, Surface Treatment of Steel Prior to Painting, discusses the pretreatment processes which were included in this investigation. The hot-dip phosphate treatment showed outstanding merit in improving the protective value of paints in all the tests. Particularly effective protection was obtained when this treatment was used in combination with a priming of the inhibitive type, such as zinc chromate. Reference should be made to Report BMS44 for a detailed discussion of the pretreatment processes tested.

2. Results of Accelerated-Weathering and Outdoor-Exposure Tests of Priming Coats on Plain Steel

Of the primings listed in table 1, 32 were tested on plain-steel panels. The panels were cut from hot-rolled, 22-United States Gage sheet steel and were pickled in an acid solution to remove rust and mill scale. The kind of acid used for pickling—whether hydrochloric, sulfuric or phosphoric—made no perceptible difference in the results. The hot-dip phosphate treatment improved the protective value of the primings, but the relative ratings are essentially in the same order whether the primings were applied to phosphate-treated or to acid-pickled steel.

After pretreatment, the panels were brushed with two coats of priming, a week being allowed for drying between application of coats. A topcoat of outside finish paint was then applied, in some cases to one-half and in other cases to the entire surface of each panel. The painted panels were scratched diagonally to the metal before being tested. All panels exposed to the accelerated-weathering and outdoors were 3 by 6 inches.

According to the results obtained from the accelerated-weathering machine and the outdoor exposure tests, the primings on steel have been rated in groups in the following decreasing order of merit with regard to durability and effectiveness in protecting the metal:

Group 1: Primings 5a, 8, 29, 30, 31, 32, 56, and 77.
Group 2: Primings 1, 3, 7, 36, 37, 38, and 54.
Group 3: Primings 2, 4, 15, 17, 34, 35, 39, 60, 68, 74, 75, 82, and 83.
Group 4: Primings 11, 14, 25, and 27.

The primings in group 1 are composed of zinc chromate or a combination of zinc chromate and iron oxide in a water-resistant, tough, very adherent, hard-drying vehicle. Synthetic resin varnishes, such as the phenol-formaldehyde and glyceryl phthalate types, undoubtedly play an important role in the performance of these primings. A paint system consisting of this type of priming over a phosphate-treated surface, and having a properly formulated top coat, combines to a high degree the essential properties governing paint-film protection of steel against corrosion. The primings in group 2 gave very good results in the outdoor-exposure test, but in the more severe accelerated-weathering test they were less effective than those in group 1. The primings in groups 3 and 4 were definitely inferior to those in groups 1 and 2.

The rating of any paint coatings on steel is necessarily influenced by the degree of such conditions as chalking, checking, cracking, flaking, scaling, peeling, and rusting. Since the failure of a paint film is usually a gradual deterioration from one condition to another, it is very difficult to designate the transition point at which the film suffers a finite change. It is admitted that some of these ratings might possibly be shifted to a neighboring group, and it is also emphasized that all the primings in any one group are not to be construed as being equal in protective value. However, it is believed that the primings in groups 1 and 2 will last longer and give better protection against corrosion than those in groups 3 and 4 under equal service conditions.

IV. Painting Galvanized-Steel Surfaces

1. Preparation of the Surface

Hot-dip galvanizing ordinarily produces a smooth and spangled structure, to which organic finishes do not readily adhere. It is well known that it is difficult to get paint to adhere satisfactorily to new zinc-coated surfaces. Many explanations have been advanced for this lack of adhesion. For example, zinc salts may be left on the surface during the galvanizing process, certain chemical reactions may take place in the paint film itself, and reactive decomposition products in the presence of moisture may react with the metal at the interface. Zinc formate has been isolated [2] at the interface between the paint and the metal zinc surface. This formation of zinc formate has been suggested as one of the possible causes for the poor adherence of paints to galvanized steel.

Pretreating new galvanized steel before painting it was found beneficial. Many chemical solutions have been recommended for this purpose. Some of these merely etch and roughen the surface. The test results in Report BMS44, indicate that the best treat-

[2] H. J. Wing, Ind. Eng. Chem. 28, 242 (1936)

ments do more than merely roughen the surface to hold paint—they change the surface chemically, depositing a nonmetallic film that prevents reaction between metal and paint, increases the adherence of the applied paint, and retards corrosion under the paint film. Solutions of the zinc-phosphate type, sold under proprietary brands, apparently accomplish these functions to a great extent. Galvanized-steel panels treated with such zinc-phosphate solutions showed marked improvement when compared with untreated panels in increasing the protective value of paints applied over them and gave the best results in all the tests. Phosphate-treated galvanized steel sheets are available commercially.

Dirt or greasy material should be removed by cleaning with a solvent, such as turpentine or mineral spirits, before pretreating or painting.

2. Results of Accelerated-Weathering and Outdoor-Exposure Tests of Priming Coats on Galvanized Steel

Of the primings listed in table 1, 35 were tested on galvanized-steel panels. The results indicate that great care should be exercised in the selection of a priming coat to be applied to the smooth, spangled surface of hot-dip galvanized steel. Very few primings proved to have satisfactory adhesion on the untreated panels. For this reason two ratings have been given, one for primings on untreated panels and the other for primings on phosphate-treated panels. It should be noted that there is a decided difference in the two ratings. The property of adhesion was given major importance in classifying the performance of primings on galvanized steel. The ratings on untreated galvanized panels are given in groups in order of decreasing merit as follows:

Group 1: Primings 9, 34, 61, and 68.
Group 2: Primings 1, 3, 4, 6, 7, 8, 12, 21, 35, 36, 60, and 74.
Group 3: Primings 2, 5a, 11, 13, 14, 15, 17, 23, 24, 25, 27, 29, 30, 31, 32, 33, 37, 38, and 39.

Here again, as in the rating of the primings on plain steel, it is admitted that some of the primings might be shifted to a neighboring group, and that all the primings in any one group are not to be construed as being equal in protective value. There are many factors to be considered in the interpretation of the results of exposure tests, and the importance attached to each will influence the final rating of the paint. All the primings under group 1 on untreated galvanized panels have good adhesion and are satisfactory for use on untreated galvanized metal. They are also satisfactory as finish coats under normal outdoor conditions and may be used in one or more coats. One coat hides completely and is adequate for many service conditions on new galvanized steel. Two coats are ample for old and slightly rusted galvanized steel surfaces, except under exposure conditions that may require added protection by special finish coats. These primings retain their color very well on prolonged exposure. Number 9 is a zinc dust–zinc oxide alkyd type paint conforming to Federal Specification TT–P–641, Type II, and is especially suitable for use on zinc coated metal.

The primings in group 2 showed fairly good adhesion, especially when a soft drying topcoat, such as lampblack in oil was used over them. However, when they were coated with a hard-drying white topcoat, the tendency to flake, scale, or peel was evident from the results of the accelerated weathering machine. Primings 4, 6, 12, 35, 36, and 60 are suitable for use without a topcoat finish, and when used alone in one or two coats will give good service under ordinary climatic conditions.

In group 3, under untreated galvanized panels, the zinc chromate and iron oxide-zinc chromate primings failed by lack of adhesion. As will be shown below, the performance of the primings in groups 2 and 3 is much better when applied to a phosphate-treated surface. In testing primings on untreated galvanized metal it was noticed that thin coats adhere much better than thick coats. Since lack of adhesion is one of the chief causes of failure of paints on new galvanized metal, it is advisable to use as few and as thin coats as will give the desired appearance.

The ratings of primings on phosphate-treated galvanized panels are given in groups in order of decreasing merit as follows:

Group 1: Primings 1, 3, 4, 5a, 6, 7, 8, 9, 12, 30, 31, 32, 33, 34, 35, 36, and 61.
Group 2: Primings 2, 14, 21, 23, 24, 25, 27, 37, 38, 39, and 60.
Group 3: Primings 11 and 13.

Primings 15, 17, 29, 68, and 74 were not tested on phosphate-treated panels. From the above ratings it will be seen that the protective value of most primings on galvanized metal is distinctly improved when applied to a phosphate-treated surface. Many of the primings that fell in groups 2 and 3 under the ratings of untreated panels are placed in group 1 on phosphate-treated panels. The improvement in the adherence of zinc chromate and iron–oxide–zinc chromate primings wasp articularly significant. These primings were found to have good rust-inhibitive properties and were very effective in preventing corrosion on phosphate-treated galvanized steel.

Economy, availability, type of surface (treated or untreated), and climatic conditions are important factors to consider in selecting a paint. By referring to the description of the primings in table 1 and their ratings given above, the painting of galvanized steel should present no great problem. In some cases Federal specification paint may be required, but for the general buying public, similar products are usually available under trade brands from most paint dealers.

V. Topcoat Paints

In table 2 is given the designation, description, and group rating of the topcoat paints tested.

TABLE 2.—*Designation, description, and group rating of topcoat paints*

Designation	Description of paint	Group rating
101	Aluminum paint. 2 pounds aluminum powder Federal Specification TT-A-476, Type A, per gallon of varnish, Federal Specification TT-V-81	1
102	Black paint in oil vehicle. Federal Specification TT-P-61, Type B. March 31, 1931	1
103	Lampblack in oil paint 13 percent lampblack pigment by weight. 87 percent linseed oil, thinner and drier.	1
104	Black iron oxide paint 39 percent pigment by weight: 94 percent black iron oxide. 6 percent red lead. 61 percent vehicle by weight: 85 percent linseed oil. 15 percent thinner and drier.	1
105	Iron oxide paint 43 percent pigment by weight: 100 percent spanish iron oxide (84% Fe_2O_3). 57 percent vehicle by weight (oil and phenol modified alkyd resin varnish): 45 percent nonvolatile containing 19 percent of glyceryl phthalate. 55 percent volatile mineral spirits.	1
106	Olive green enamel, glyceryl phthalate type, Post Office Department Specification, revised as of October 31, 1939	1
107	Titanium barium-zinc oxide (cream) in alkyd resin vehicle 46 percent pigment by weight: 50 percent titanium-barium. 40 percent zinc oxide. 10 percent asbestine. 54 percent vehicle by weight: 57 percent nonvolatile oil-resin, containing 31 percent glyceryl phthalate. 43 percent volatile mineral spirits. The paint was tinted cream with yellow oxide in oil.	2
108	Gray house paint 64 percent pigment by weight: 20 percent lead titanate. 25 percent basic lead carbonate. 26 percent zinc oxide. 29 percent magnesium silicate. 36 percent vehicle by weight:	2

1. Results of Tests of Topcoat Paints

All the paints listed in table 2 were exposed outdoors on primed steel panels. A selected number were exposed in the accelerated-weathering machine on galvanized and plain-steel panels, both primed before application of the topcoat.

The function of the final coat on structural steel is to protect the underlying coats and to give the desired color. In one case the protective value of the finish coat may be of major importance, whereas in another case the decorative effect may hold prominence. From the results obtained in these tests it was found that aluminum, black, and dark-colored paints are more durable than white or light-colored paints. This appears to be in general agreement with actual service performance. Also, it was noted that, if a white lead–zinc oxide base paint is tinted, for example to a light- or medium-gray color, the durability is improved. The retention of color, gloss, and general appearance of dark-colored linseed-oil paints can be improved by adding a small amount of spar varnish to the paint. This should not exceed 1 pint of varnish to 1 gallon of paint, and care should be taken to select a varnish that will mix properly with the particular paint. Some of the newer specification paints contain a small amount of varnish in the ready-mixed paint as received. For example, Federal Specification TT–P–71a, April 9, 1941, superseding TT–P–71, states that the liquid in the ready-mixed paint shall be a fortified linseed-oil vehicle consisting of a mixture of 70 percent of linseed oil, 20 percent of nonreactive spar varnish, and 10 percent of combined drier and thinner.

Table 2. (Cont.)—*Designation, description, and group rating of topcoat paints*

Designation	Description of paint	Group rating
	Gray house paint—Contd. 87 percent processed linseed and tung oil. 13 percent thinner and drier.	
109	International Orange Paint..... 70 percent pigment by weight: 90 percent basic lead chromate. 10 percent magnesium silicate. 30 percent vehicle by weight: 80 percent raw linseed oil. 10 percent spar varnish, TT-V-121a. 10 percent drier.	2
110	Chrome Green Paint. Federal Specification TT-P-71, Type B. August 19, 1930.....	2
111	Titanium dioxide-zinc oxide (cream) in alkyd resin vehicle..... 36 percent pigment by weight: 80 percent titanium dioxide, nonchalking. 20 percent zinc oxide. 64 percent vehicle by weight: 50 percent nonvolatile oil-resin, containing 20 percent glyceryl phthalate. 50 percent volatile mineral spirits.	2
112	Lead titanate-zinc oxide (cream) in alkyd resin vehicle..... 48 percent pigment by weight: 80 percent lead titanate. 20 percent zinc oxide. 52 percent vehicle by weight: 50 percent nonvolatile oil-resin, containing 20 percent glyceryl phthalate. 50 percent volatile mineral spirits.	2
113	Titanium dioxide-zinc oxide (white) in alkyd resin vehicle..... 34 percent pigment by weight: 80 percent titanium dioxide. 20 percent zinc oxide. 66 percent vehicle by weight: 50 percent nonvolatile oil-resin containing 20 percent glyceryl phthalate. 50 percent volatile mineral spirits.	3
114	White lead-zinc oxide in oil paint. Federal Specification TT-P-36a, Type II, Class B. July 23, 1938.....	3
115	Titanium-zinc-lead in oil paint. Federal Specification TT-P-101a, Type A. March 11, 1936	3

From the exposure results, the topcoat paints have been rated in groups in the following decreasing order of merit with regard to durability:

Group 1: Paints 101, 102, 103, 104, 105, and 106.
Group 2: Paints 107, 108, 109, 110, 111, and 112.
Group 3: Paints 113, 114, and 115.

In group 1 will be found aluminum, iron oxide, olive drab, and black paints. These paints have exceptional resistance to the effects of sunlight and outdoor weathering. They are recommended particularly for structures where the maximum protective value is desired and decoration is of minor importance. Aluminum paint would be the best where moisture and high humidity prevail.

Group 2 contains the tinted and dark-colored paints.

Paint 109, International Orange, and paint 110, Chrome Green, are very durable and are recommended where their respective colors are desired. On exposure, these paints show fairly good color retention, but the color becomes rather "dead" and somewhat "faded" because of mild chalking. In the latest Federal specifications covering these types of paints, the vehicle contains a small amount of spar varnish, which improves the color retention. Paint 108 is a house paint of the slow-drying oil type tinted to a light-gray color. It dries overnight to a soft film, and several days should be allowed for drying between coats. Paint 107, 111, and 112 are cream tinted, synthetic resin alkyd (oil) type topcoats, which dry to a smooth, glossy finish. They dry faster than the orthodox type of oil paint and on outdoor exposure tend to show some chalking and fading.

All the paints in group 3 are white. Paint 114 and 115 are the linseed-oil type and are widely used house paints. The white lead-zinc oxide paint, No. 114, can be obtained in a great variety of tints that will remain fairly stable. Federal Specification TT–P–101a, Type A, represented by paint 115, covers the requirements for a white oil paint for general outside use. Since tints made with this type of paint are likely to show early fading, it should be used only as white. A paint conforming to Federal Specification TT–P–40, Type I, Class B (not included in these tests), is a special fume-proof (lead-free) paint intended for use where sulfide fumes, which will darken paints containing lead, may be encountered. Federal Specification TT–P–40, May 19, 1943, entitled Paint; Oil, Exterior, Ready-Mixed, Light-Tints and White, now supersedes Federal Specifications TT–P–36a, TT–P–101a and TT–P–156. Paint 113, in group 3, is an alkyd (oil) type of white paint that dries to a smooth, glossy finish. From a decorative point of view, this paint retains its whiteness for a long time as it chalks rather freely, and any accumulation of dust or dirt on the surface is readily washed off by rain. Although not as durable as the tinted paints in group 2, it does have the advantage of giving a very white appearance especially during its early exposure period.

In many cases, the selection of a finish-coat paint for metal structures, buildings, and equipment is entirely a matter of choice, and depends on whether the protective value or the decorative effect is of primary significance. For warehouses, storage houses, bridges, water tanks, agricultural implements, and industrial buildings, the paints in group 1 above would probably be most satisfactory. On the other hand, for residences and dwellings, the less durable white and tinted paints will be preferred for esthetic reasons.

VI. Summary and Conclusions

A large number of priming- and finish-coat paints, representing various types, were tested for durability and protective value against corosion by means of accelerated laboratory and outdoor-exposure tests. The composition of the paints and the relative ratings, based on their performance in these tests, are discussed in detail in this publication. Many paints have satisfactory properties that make them suitable for use in protecting metal structures. Locality, temperature, humidity, kind of surface (galvanized or plain-steel), interior or exterior exposure, and general climatic conditions should be considered before selecting a protective coating.

Careful cleaning and preparation of the surface are considered more important than the quality of the paint. The performance

of the best paint materials available will be doubtful if little or no attention is given to cleaning and preparing the surface. The tests showed that clean phosphate-treated surfaces materially improve the adherence and protective value of paints.

Zinc chromate and iron oxide-zinc chromate primings, when properly formulated with a synthetic-resin vehicle, make very good rust-inhibitive coatings. A system composed of phosphate-treated galvanized steel, zinc chromate priming, and aluminum topcoat paint combines to a high degree the essential requirements necessary to withstand corrosive atmospheres.

The types of primings rated in group 1 for plain steel surfaces should be used where atmospheric conditions may be severe. For locations where climatic conditions tend less to induce corrosion, the primings in group 2 should be satisfactory.

Treating new galvanized steel before painting is recommended. Emphasis is given to the importance of preparing the metal surface, and the improved performance of synthetic resin primings when applied to phosphate-treated surfaces.

The zinc dust primings rated in group 1 under untreated galvanized steel, are intended for application on new or old galvanized surfaces, and no chemical treatment of the metal is contemplated before using these primings, but accepted treatments may be used if it seems desirable.

Under the ratings on phosphate-treated galvanized steel, primings in both groups 1 and 2 have satisfactory adhesion and will give good service when applied to such surfaces. Naturally, in the more corrosive atmospheres, the rust-inhibitive primings in group 1 should be given preference.

Appearance and local custom will likely be the dominating factors in choosing finish paints for low-cost steel houses. Except in the neighborhood of industrial centers or marine atmospheres, the conventional white or tinted linseed-oil house paints will be satisfactory. In some cases the enamel-like long oil alkyd topcoats may be preferred. As long as the metal is protected from attack by the elements, the question of when to repaint a house depends largely upon individual opinion, but painting should be often enough to keep the appearance consistent with local standards.

Since the cost of application is the major item in painting any structure, price should not be the deciding factor in selecting the materials. However, higher initial cost of materials may be more economical.

EDITOR'S NOTE

Although we feel that the foregoing report contains material of specific and timely interest to property managers, we have reprinted it so that our readers may study an example of the type of information which the National Bureau of Standards issues at regular intervals. It is our opinion that all well-operated management offices should have in their library, in addition to the normal periodicals which they receive, a file of these reports which apply to the operation of buildings. The following are the publications already issued in the "Building Materials and Structure Reports" series. The price is indicated as well as the report number and the subject matter.

On request the Superintendent of Documents of the U. S. Government Printing Office will, without charge, place your name on a special mailing list to receive notices of new reports in this series as soon as they are issued. An alternative method is to deposit with the Superintendent of Documents the sum of $5 with a request that the reports are to be sent to you as soon as issued and that the cost thereof should be charged against your deposit. This will provide for the mailing of the publications without delay and you will be notified when the amount of your deposit has become exhausted. Send orders and remittances to Supt. of Documents, U. S. Gov. Printing Office, Washington 25, D. C.

BMS1	Research on Building Materials and Structures for Use in Low-Cost Housing	10¢
BMS2	Methods of Determining the Structural Properties of Low-Cost House Constructions	10¢
BMS3	Suitability of Fiber Insulating Lath as a Plaster Base	10¢
BMS4	Accelerated Aging of Fiber Building Boards	10¢
BMS5	Structural Properties of Six Masonry Wall Constructions	15¢
BMS6	Survey of Roofing Materials in the Southeastern States	15¢
BMS7	Water Permeability of Masonry Walls	10¢
BMS8	Methods of Investigation of Surface Treatment for Corrosion Protection of Steel	10¢
BMS9	Structural Properties of the Insulated Steel Construction Co.'s "Frameless-Steel" Constructions for Walls, Partitions, Floors, and Roofs	10¢
BMS10	Structural Properties of One of the "Keystone Beam Steel Floor" Constructions Sponsored by the H. H. Robertson Co	10¢
BMS11	Structural Properties of the Curren Fabrihome Corporation's "Fabrihome" Constructions for Walls and Partitions	10¢
BMS12	Structural Properties of "Steelox" Constructions for Walls, Partitions, Floors, and Roofs Sponsored by Steel Buildings, Inc	15¢
BMS13	Properties of Some Fiber Building Boards of Current Manufacture	10¢
BMS14	Indentation and Recovery of Low-Cost Floor Coverings	10¢
BMS15	Structural Properties of "Wheeling Long-Span Steel Floor" Construction Sponsored by the Wheeling Corrugating Co	10¢
BMS16	Structural Properties of a "Tilecrete" Floor Construction Sponsored by Tilecrete Floors, Inc	10¢
BMS17	Sound Insulation of Wall and Floor Constructions	10¢
	Supplement to BMS 17, Sound Insulation of Wall and Floor Construction	5¢
BMS18	Structural Properties of "Pre-fab" Constructions for Walls, Partitions, and Floors Sponsored by the Harnischfeger Corporation	10¢
BMS19	Preparation and Revision of Building Codes	15¢
BMS20	Structural Properties of "Twachtman" Constructions for Walls and Floors, Sponsored by Connecticut Pre-Cast Buildings Corporation	10¢
BMS21	Structural Properties of a Concrete-Block Cavity-Wall Construction Sponsored by the National Concrete Masonry Association	10¢
BMS22	Structural Properties of "Dun-Ti-Stone" Wall Construction Sponsored by the W. E. Dunn Manufacturing Co	10¢
BMS23	Structural Properties of a Brick Cavity-Wall Construction Sponsored by the Brick Manufacturers Association of New York, Inc	10¢
BMS24	Structural Properties of a Reinforced-Brick Wall Construction and a Brick-Tile Cavity-Wall Construction Sponsored by the Structural Clay Products Institute	10¢
BMS25	Structural Properties of Conventional Wood-Frame Constructions for Walls, Partitions, Floors, and Roofs	15¢
BMS26	Structural Properties of "Nelson Pre-Cast Concrete Foundation" Wall Construction Sponsored by the Nelson Cement Stone Co., Inc	10¢
BMS27	Structural Properties of "Bender Steel Home" Wall Construction Sponsored by the Bender Body Co	10¢
BMS28	Backflow Prevention in Over-Rim Water Supplies	10¢
BMS29	Survey of Roofing Materials in the Northeastern States	10¢
BMS30	Structural Properties of a Wood-Frame Wall Construction Sponsored by the Douglas Fir Plywood Association	10¢
BMS31	Structural Properties of "Insulite" Wall and "Insulite" Partition Constructions Sponsored by The Insulite Co	15¢
BMS32	Structural Properties of Two Brick-Concrete-Block Wall Constructions and a Concrete-Block Wall Construction Sponsored by the National Concrete Masonry Association	10¢
BMS33	Plastic Calking Materials	10¢
BMS34	Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 1	10¢
BMS35	Stability of Sheathing Papers as Determined by Accelerated Aging	10¢
BMS36	Structural Properties of Wood-Frame Wall, Partition, Floor, and Roof Constructions with "Red Stripe" Lath Sponsored by The Weston Paper and Manufacturing Co	10¢
BMS37	Structural Properties of "Palisade Homes" Constructions for Walls, Partitions, and Floors, Sponsored by Palisade Homes	10¢
BMS38	Structural Properties of Two "Dunstone" Wall Constructions Sponsored by the W. E. Dunn Manufacturing Co	10¢
BMS39	Structural Properties of a Wall Construction of "Pfeifer Units" Sponsored by the Wisconsin Units Co	10¢
BMS40	Structural Properties of a Wall Construction of "Knap Concrete Wall Units" Sponsored by Knap America, Inc	10¢
BMS41	Effect of Heating and Cooling on the Permeability of Masonry Walls	(*)
BMS42	Structural Properties of Wood-Frame Wall and Partition Constructions with "Celotex" Insulating Boards Sponsored by The Celotex Corporation	15¢
BMS43	Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 2	10¢
BMS44	Surface Treatment of Steel Prior to Painting	10¢
BMS45	Air Infiltration Through Windows	10¢
BMS46	Structural Properties of "Scot-Bilt" Prefabricated Sheet-Steel Constructions for Walls, Floors, and Roofs Sponsored by The Globe-Wernicke Co	10¢
BMS47	Structural Properties of Prefabricated Wood-Frame Constructions for Walls, Partitions, and Floors Sponsored by American Houses, Inc	10¢
BMS48	Structural Properties of "Precision-Built" Frame Wall and Partition Constructions Sponsored by the Homasote Co	10¢
BMS49	Metallic Roofing for Low-Cost House Construction	10¢
BMS50	Stability of Fiber Building Boards as Determined by Accelerated Aging	10¢
BMS51	Structural Properties of "Tilecrete Type A" Floor Construction Sponsored by the Tilecrete Co	10¢
BMS52	Effect of Ceiling Insulation Upon Summer Comfort	10¢
BMS53	Structural Properties of a Masonry Wall Construction of "Munlock Dry Wall Brick" Sponsored by the Munlock Engineering Co	10¢
BMS54	Effect of Soot on the Rating of an Oil-Fired Heating Boiler	10¢
BMS55	Effects of Wetting and Drying on the Permeability of Masonry Walls	10¢
BMS56	A Survey of Humidities in Residences	10¢
BMS57	Roofing in the United States—Results of a Questionnaire	10¢
BMS58	Strength of Soft-Soldered Joints in Copper Tubing	10¢
BMS59	Properties of Adhesives for Floor Coverings	10¢

* Out of print

BMS60 Strength, Absorption, and Resistance to Laboratory Freezing and Thawing of Building Bricks Produced in the United States ..... 15¢
BMS61 Structural Properties of Two Nonreinforced Monolithic Concrete Wall Constructions ..... 10¢
BMS62 Structural Properties of a Precast Joist Concrete Floor Construction Sponsored by the Portland Cement Association ..... 10¢
BMS63 Moisture Condensation in Building Walls ..... 10¢
BMS64 Solar Heating of Various Surfaces ..... 10¢
BMS65 Methods of Estimating Loads in Plumbing Systems ..... 10¢
BMS66 Plumbing Manual ..... 20¢
BMS67 Structural Properties of "Mu-Steel" Prefabricated Sheet-Steel Constructions for Walls, Partitions, Floors, and Roofs Sponsored by Herman A. Mugler ..... 15¢
BMS68 Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 3 ..... 15¢
BMS69 Stability of Fiber Sheathing Boards as Determined by Accelerated Aging ..... 10¢
BMS70 Asphalt-Prepared Roll Roofings and Shingles ..... 15¢
BMS71 Fire Tests of Wood- and Metal-Framed Partitions ..... 20¢
BMS72 Structural Properties of "Precision-Built, Jr." Prefabricated Wood-Frame Wall Construction Sponsored by the Homasote Co ..... 10¢
BMS73 Indentation Characteristics of Floor Coverings ..... 10¢
BMS74 Structural and Heat-Transfer Properties of "U. S. S. Panelbilt" Prefabricated Sheet-Steel Constructions for Walls, Partitions, and Roofs Sponsored by the Tennessee Coal, Iron & Railroad Co ..... 15¢
BMS75 Survey of Roofing Materials in the North Central States ..... 15¢
BMS76 Effect of Outdoor Exposure on the Water Permeability of Masonry Walls ..... 15¢
BMS77 Properties and Performance of Fiber Tile Boards ..... 10¢
BMS78 Structural, Heat-Transfer, and Water-Permeability Properties of Five Earth-Wall Constructions ..... 20¢
BMS79 Water-Distributing Systems for Buildings ..... 15¢
BMS80 Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 4 ..... 15¢
BMS81 Field Inspectors' Check List for Building Construction (cloth cover, 5 x 7½ inches) ..... 20¢
BMS82 Water Permeability of Walls Built of Masonry Units ..... 20¢
BMS83 Strength of Sleeve Joints in Copper Tubing Made With Various Lead-Base Solders ..... 10¢
BMS84 Survey of Roofing Materials in the South Central States ..... 15¢
BMS85 Dimensional Changes of Floor Coverings with Changes in Relative Humidity and Temperature ..... 10¢
BMS86 Structural, Heat-Transfer, and Water-Permeability Properties of "Speedbrik" Wall Construction Sponsored by the General Shale Products Corporation ..... 15¢
BMS87 A Method for Developing Specifications for Building Construction—Report of subcommittee on specifications of the Central Housing Committee on Research, Design, and Construction ..... 10¢
BMS88 Recommended Building Code Requirements for New Dwelling Construction with Special Reference to War Housing ..... 20¢
BMS89 Structural Properties of "Precision-Built, Jr." (Second Construction) Prefabricated Wood-Frame Wall Construction Sponsored by the Homasote Co ..... 15¢
BMS90 Structural Properties of "PHC" Prefabricated Wood-Frame Constructions for Walls, Floors, and Roofs Sponsored by the PHC Housing Corporation ..... 15¢
BMS91 A Glossary of Housing Terms ..... 15¢
BMS92 Fire-Resistance Classifications of Building Constructions ..... 25¢
BMS93 Accumulation of Moisture in Walls of Frame Construction During Winter Exposure ..... 10¢
BMS94 Water Permeability and Weathering Resistance of Stucco-Faced, Gunite-Faced, and "Knap Concrete-Unit" Walls ..... 10¢
BMS95 Tests of Cement-Water Paints and Other Waterproofings for Unit-Masonry Walls ..... 15¢
BMS96 Properties of a Porous Concrete of Cement and Uniform-Sized Gravel ..... 10¢
BMS97 Experimental Dry-Wall Construction With Fiber Insulating Board ..... 10¢
BMS98 Physical Properties of Terrazzo Aggregates ..... 15¢
BMS99 Structural and Heat-Transfer Properties of "Multiple Box-Girder Plywood Panels" for Walls, Floors, and Roofs ..... 15¢
BMS100 Relative Slipperiness of Floor and Deck Surfaces ..... 10¢
BMS101 Strength and Resistance to Corrosion of Ties for Cavity Walls ..... 10¢
BMS102 Painting Steel ..... 10¢

DO YOU WRITE YOUR SENATOR?

Every now and then real estate boards—driven by some new devils of legislative threat—send frantic appeals for all Realtors everywhere to wire Congress immediately. In the interim, legislators are always eager for sincere, unsolicited, and factually valuable word from home. One such letter was so outstanding in its frank appeal it is here reproduced. For obvious reasons both the author and the addressee are anonymous.

Honorable John Doe
United States Senator
Washington, D. C.

Dear Senator Doe:

You will recall that we had a brief discussion about the future of rent control and I want to review this subject with you and to put down my views and conclusions as I see the picture. I decided some time ago that, so long as the war was in progress, I would not express my views, but now that we are entering the postwar era, I feel it is proper for me to speak.

As you know, I have been engaged in work in the real estate field most of my life, and recently I have been in a position to become intimately familiar with the various control programs affecting our citizens and our business institutions. Consequently, I feel I am qualified to make a few observations about the rent control program in the hope that they may be of some value to you in the future.

Rent control, while it has often been a very troublesome operation, is probably the most effective and rigid control program undertaken during the war emergency. I use the word "effective" in the sense that rents were held at base levels far more firmly than prices for products available for home consumers. Rents have scarcely moved from their tracks, while food, wages, clothing, services, building materials and other consumer items close to the hearts and pocketbooks of our citizens have made substantial—and often sensational—advances over prewar levels. I do not think any sane citizen will dispute this statement.

The program has been rather rigid, with the exception of rents charged by government housing agencies operating in competition with private owners, and the typical owner of residential units has had little or no luck in securing adjustments in inequitable rent schedules. The rent control regulation does provide for an adjustment under the "hardship" section but the typical owner, without the aid of a certified public accountant or the services of an adept loose-leaf lawyer, soon gets lost in the subsections and fine print and doesn't apply—or if he does apply, he eventually retires to brood about what his government is doing to him.

Almost all economists, in government or on the outside, agree that the freeze-type regulation is a splendid technique to use in securing mass control quickly. But they also agree that it is a type of regulation which has the greatest possible number of inequalities as between like sellers or vendors and that it should be used to control the industry only until basic regulations can be prepared which will give a greater degree of general fairness. We have seen the General Maximum Price Regulation (freeze-type) abandoned in one field after another,

with the substitution of formula prices, percentage mark-up prices, dollars-and-cents prices, community prices, flat prices, escalator prices, and various other methods. In each case the action was accompanied by a statement that the freeze-type regulation was being eliminated and a new method used so as to provide for a more fair and equitable method of pricing.

The rent control regulation has been in effect for more than three years, and during that time practically nothing has been done in any effort to make it more fair and equitable. The only known times when any changes have been made have been when top rent control officials have felt the breath of congress blowing down their necks.

The owner of residential units is often required to rent identical units for different rents or to rent his units for rates which are below those allowed for comparable units owned by another individual. There is nothing in the rent regulation which gives him any relief from this situation if his property was rented on the freeze date, unless he can prove that on that date he was renting to a son, brother, or some other preferred person and for that reason was not charging a normal rent. These cases are very rare and were all settled in the early days of rent control. I think that some effort should be made and means provided whereby the gross inequities in rents for comparable properties can be corrected.

Prior to the end of the war, the OPA didn't have the funds to do too much of a field job, but V-J Day has drastically changed the picture. The gasoline rationing program was the greatest single expense burden of the agency and with this program discontinued thousands of clerks and supervisory personnel will be eliminated—leaving more than ample funds available in the appropriation to do the kind of an intelligent job that should be done on rent control. There is now no sound reason for the OPA to refuse to make a serious attempt to place rent control on a more equitable basis.

What often hurts much more than the inequalities in the rental rates is the fact that, under the regulation, the owner is practically powerless to control or to do anything about an undesirable tenant. Part of the value of a property is often materially affected by the character of tenants who are permitted to occupy it, and in normal times when an owner made a mistake in his judgment of the character of a tenant, he quickly and quietly evicted him and secured one who was more in keeping with the property. Today, it is practically impossible to gain possession from an undesirable tenant and the owner is often forced to see long-time, quality tenants move from his property because of one "bad apple" which he cannot eliminate because of OPA regulations. To prove that a tenant is undesirable, the owner must just about be able to point to the conviction of the tenant in court on some charge such as, disturbing the peace, attempted rape or habitual drunkenness.

At a time when an eviction might be construed as an act interfering with war production, there was some basis for the OPA to lean over backwards at an angle of 90 degrees from the perpendicular in favor of any tenant charged with being undesirable, but war production today is not a problem and the owner should be permitted to resume his normal landlord-tenant relationship so far as occupancy is concerned.

Last week I talked to a veteran who was attempting to gather up the tangled threads of his civilian existence. His main concern was to find a house to rent which would adequately house his small family. I had two units, either of which under normal conditions I would have been happy to make available to him if I had the power to secure possession from their present occupants—

people who have failed to take care of the property. I know that if owners were restored their age-long right to be the sole judge of the desirability of a tenant in possession under a month-to-month agreement, veterans would find a vastly increased number of units available for their families.

The larger question of when rent control should be lifted from an area is a problem which may be of some interest to the members of Congress and the criterion for the relinquishment of such controls should bear your careful scrutiny. I think there is general agreement on the view that rent control cannot be lifted immediately from all communities without some serious results, but I think that most informed individuals agree that today there are some areas where the restrictions could be lifted without any impact upon our economy.

Keeping in mind that residential rents generally are frozen at a level about 30 per cent below the general price level of today, I think it would be as unwise to continue rent control until competitive forces bring about a market at freeze date levels, as it would be to throw off controls abruptly today in highly congested districts. Our economists say that controls should be continued until supply and demand bear a fairly normal relation, but it will be impossible to determine a normal relationship between rental supply and demand until the rent level bears a normal relationship with the general price level. If the present general price level continues, our authorities have an obligation to bring rents into normal relationship with it. This can be done gradually and over a period of a year, but this adjustment should start now. The rental rate has an enormous effect upon the supply and demand relationship.

The owners of residential rental units merit some consideration at the hands of the government, as no other general class of productive property has been subjected to such control. Almost every line of business under price control has been permitted to operate with net profits vastly in excess of those of prewar levels and almost every well organized business is going into the postwar period with reserves of a substantial nature, with even the tax laws providing for postwar tax credits.

But the typical owner of a residential rental unit has not been on any such gravy train, he has been frozen with a rent now out of relationship with the general price level. He has to pay higher prices for materials; he pays more—much more—to the plumber, plasterer, painter, electrician, janitor, yard man, and carpenter and he cannot make any intelligent plans for the future because of the lack of a clear and fair government policy on rent control in this postwar period. These owners are not asking for any special favors, they just want to be treated like other economic groups, but as they look at the words "generally fair and equitable" in price control legislation they wonder when their time is coming.

I know that there are many sides and angles to every question and I am keenly conscious that the government still must combat the problem of inflation and must furnish general protection for a time to those citizens who have a fixed income. But property owners are citizens also—stable citizens—constructive citizens—citizens who have helped to build this country—citizens who now feel that perhaps their interests have been forgotten, particularly when they observe the quick dissolution of scores of other wartime regulations.

Again, I want to tell you how much I enjoyed our talk and to express the hope that my personal observations on the subject of rent control can be of some use to you.

Yours truly,

A Realtor

Division of Education

Ben O. Kirkpatrick, *Chairman*

BEFORE we talk about the meeting held at French Lick in November, let us take a good look at a phase of the property management picture.

Almost any normal person knows that the finest violin produces its smoothest and sweetest music in the hands of a trained and talented artist. A child can draw the bow across the strings and bring forth a sound, but it requires the hand of a master to create a melody that will delight the ear and soothe the soul. Mere ownership of a violin does not make a man a musician.

But, very few people seem to understand clearly that even the finest real estate produces its greatest return only when it receives the best of management. Any owner can normally produce some income, for a time, but it requires the attention of a competent property manager to develop and maintain the greatest net income from a property. Mere ownership of real estate does not make a man a property manager.

Neither the violin nor any real estate has the capacity to think for itself. Both, however, will give their best when under the guiding hand of an expert.

When the artist has ceased to play, he may lay aside the violin until it suits his pleasure to play again, be it a day, a week or a year. But, if the careful hand of management is laid aside, the ever shifting and inevitable tide of economic change will wash away a part—or even all—of the productive income, often leaving but a shell of what was once a splendid real estate investment. Management must be continuous, not capricious.

There is no possible substitute for careful, skillful, experienced, intelligent and trustworthy management of real estate. Members of the Institute of Real Estate Management are selected with care. These individuals, who are authorized to use the designation of Certified Property Manager, in their professional work, are available to serve the needs of prudent and thoughtful owners of real estate throughout the nation.

If real estate is worth owning, it is entitled to the best of management and we in the Institute of Real Estate Management constitute the only group which can make such a service available, on a professional basis, to the owners of a wide range of property types.

But, these Facts of Life are little known and but slightly understood by the general public, by property owners and even by our associates in other phases of the real estate profession. The responsibility for initiating a program to educate these groups as to the purpose of our Institute and the qualifications of our members, was assumed by the Division of Education at the French Lick meeting and we intend to accomplish this with the active help of all members of the Institute. It is time for each member to pull his light out from under the bushel and let its educational rays penetrate this management darkness.

The first positive step taken on this program was an agreement by the regional vice presidents, under the leadership of William J. Porter of Lansing, Michigan, to handle a part of the work relating to the education of others in the real estate business as to the

work of this Institute. Each vice president will be responsible, within his region, for ascertaining the date of each sectional or state meeting of real estate groups and securing a place on the program for an address on management. If you are called on to help by making a talk or preparing management exhibits, we expect you to do your best. Everyone has to work, and no really good property manager ever fails his responsibilities.

Other steps are in preparation and will be set in motion at the time of the January meeting of the Governing Council.

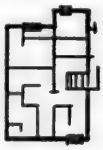
We also have the obligation to see that our members improve the quality of their performance, year by year, so that all of us may render the kind of professional management service that each property, and each owner, fully deserves. This is a job which has been done best through the holding of many lecture courses on the fundamentals of real estate management, throughout the country. This part of our educational work was considered by the Governing Council and a tentative decision was made to increase the size of our faculty so that more schools could be held each year. This would permit more of our members to have a convenient opportunity to learn the latest techniques and policies in the property management field, as well as affording an opportunity to add more worthwhile members to our group.

Specifically, we plan to hold regular management schools, during 1946, at some point in Washington or Oregon; at Atlanta, Georgia; and perhaps in Indianapolis or Chicago. Plans also are being formulated for the training of a faculty to teach modified property management courses in five or six areas where it would be difficult to hold the regular school. If you are interested in having a school in your community, write to us and tell us how many qualified property managers we could expect to enroll.

Joining with us in our educational efforts at French Lick, Stewart Crebs of Los Angeles, and his Chapter Delegates Committee recommended to the Chapters that they: (a) each create and maintain a property management library; (b) make a census of all property managers and all property management firms in their area; (c) make a recommendation as to whether there is enough material (as shown by the census) to justify a property management school; (d) submit ideas for chapter programs of an educational nature; and (e) assemble and forward to Mr. Crebs, the best local advertising items so that they may be available for other chapters. We expect our chapters to be powerful instruments in our educational work.

The Governing Council confirmed the appointment of C. Armel Nutter of Camden, New Jersey, and Joseph R. Smith of Dallas, Texas, as members of the Division of Education. These men have had long years of service in property management, both have had considerable experience in real estate educational work and both are eager to do the kind of a job which should be done. They are now working on several plans and projects which you will hear about during the year.

In the meantime, drag your light out from under the bushel and let it shine. If it is growing dim, brighten it by attending the next management school.



Standards & Planning

Nathan Poole, *Chairman*

NATHAN POOLE of Washington, D. C., K. P. Wood, Jr., of Cincinnati, Ohio, and James M. Bowler of Brighton, Massachusetts, comprise the Advisory Board of the Division of Standards and Planning. Nate Poole, as Chairman, called two meetings of the Board during the French Lick conference held the week of November 25. At these organization meetings the Board outlined the objectives of this Division which they concluded to be:

1. Standardization of operating records and forms;
2. Establishment of uniform classifications and units by which management experience might be recorded and exchanged between members;
3. Development of a planning service which would make available to architects and owners contemplating construction of a major project, the experience of management men who have operated similar buildings.

The order in which these three objectives have been listed does not indicate their importance, but rather the order in which it was felt they might be undertaken.

Pat Wood, who is associated with the Union Central Life Insurance Company of Cincinnati, presented the viewpoint of institutional owners of real estate as to real estate management.

A discussion of the possibilities and desirability of developing uniform statements for reporting to owners, resulted in the Board's decision to begin its work by the study of existing owners' statement. The Chairman was authorized to solicit each CPM for copies of his various forms.

Consideration of the question of the establishment of classifications and units was postponed until the January meeting after some discussion of the decimal system of accounting classification which, it was thought, would offer the greatest advantage.

Planning service discussion involved the consideration of several types of buildings in which there might be a field for consultation. It was decided to send a questionnaire to Institute members asking them to outline their fields of particular experience in management, especially apartment projects, small stores and office properties, as well as neighborhood shopping centers. These questionnaires, the Board felt, would disclose which of our members have had outstanding experience in various fields. Those members then would be contacted to determine whether their services could be made available, on some appropriate per diem and expense basis, to architects and owners whom they would meet in a city where a project was to be built for a systematic and thorough discussion of the architectural and construction problems. The entire discussion probably would be taken down in shorthand and later transcribed and indexed for guidance in the revision of the plans to incorporate desirable features.

The general plan of divisional work recently adopted by the Institute received considerable attention and it was suggested that although it was necessary to appoint the Division Advisors for terms of one, two, and three years initially, the same Advisors, especially those serving the one- and two-year terms, should be re-appointed if they do effective work, so that the continuity of early efforts might be preserved.

Division of Research

Richard F. Jones, Jr., *Chairman*

ACCEPTANCE by three CPMs of their appointment to the Advisory Board of the Division of Research was the first step in the organization of this important work during the conference at French Lick. Headed by CPM Richard F. Jones, Jr., Vice President of the Institute from New England, the Board includes Richard Lawrence Nelson of Chicago and Thomas B. Knowles of Denver.

Two meetings of the Board were held during which research possibilities were discussed. President Wenzlick explained that the work of the Board should be directed toward outlining a continuing program which would provide for the production of some useful material for Institute members as soon as possible. Plans were made for research similar to the present experiment on the life of the electric lamps being conducted under the direction of Richard L. Nelson. It was stressed that a permanent research program conducted by our own man in the Bureau of Standards laboratories in Washington, D.C., should be undertaken when feasible.

The discussion included the two operating Manuals, *Plaster* and *Water Paints*, which already have been issued, and the preparation of additional Manuals on the following subjects: *Lawns and Planting*; *Wallpaper*; *Accounting*; *Floors and Floor Coverings*; *Insulation*; and *Plumbing*. Arrangements were made for the employment of an individual to do the necessary research work and write these Manuals. The Board was gratified by the number of extra copies of the two Manuals already published which had been sold to members and others at $1.00 each. A suggestion was made that appropriate ring binders in which the Manuals can be filed be furnished all members. The Governing Council subsequently authorized the purchase of such binders.

The question of soliciting large manufacturers for contributions to an impartial research program on products used in real estate management was also discussed and will be given attention at future meetings.

Use of the Journal for the presentation of special research projects was also discussed as were a number of subjects having to do with merchandising of management service. It was decided to issue all reports of the Division of Research in 8½-by-11-inch form, punched for ring binders, so that they might be available for convenient reference.

Whenever discussion turned to the subject of a long-range program the conclusion was always that a full-time technician should be employed as soon as income would permit.

All in all, the meetings were considered by the advisors as enthusiastically successful.

MAINTENANCE EXCHANGE

By *Richard Lawrence Nelson, CPM, MAI,* EDITOR

Letters of Inquiry, Comments by Readers, Notes by the Editor

New Pest Control Techniques

Perhaps only second in importance to the release of atomic energy as a wartime scientific discovery has been the development during the war period of new pest control techniques and materials. The scientific advances in this rather unromantic field have been numerous and far reaching, and many military men say their overall effect was so important in relation to the Pacific theater that they undoubtedly shortened the war materially. These new techniques are now rapidly being made available for civilian use through the ordinary commercial channels. The advertising and ballyhoo which is accompanying them, however, is causing considerable consternation among exterminating contractors and is creating a tenant relations problem for property managers. The American public which believes it is going to drive its automobiles with atomic energy the day after tomorrow, is equally convinced that there is available to the manager today materials and techniques which immediately can obviate all pest infestations. The appearance of rats, mice, cockroaches, and other pests, therefore, represents in their minds merely sluggishness and inattention on the part of the building operator. It therefore behooves all managers to know well the new materials which are available and to be able to demonstrate their knowledge as superior to that which the public is gleaning from the popular magazines, from billboards, and from the great flood of direct mail advertising.

For these reasons we have made a considerable study of the new insecticides and rodenticides and are reporting herewith the most recent and most interesting developments in these fields.

DDT

The most dramatic of the new products has been the insecticide "DDT." Some of the early information about this material was reported in this column at the time of the first surge of excitement which its civilian release effected. This material now, however, has nearly passed the boom and ballyhoo stage and it is beginning to occupy what might be termed "a more normal position in the pest control field." Continuing experiments by the Federal government, the army, professional exterminators, housing officials, as well as by the Institute are beginning to show clear outlines as to its strength and weaknesses. It should not be long before careful detailed specifications for its use are available. Among the more recent determinations in regard to DDT have been the following:

1. The lasting power of DDT is adversely affected through contact with substances which are strongly alkaline—strong soaps, for example.

2. Sunlight also has a deleterious effect upon the lasting power of DDT. This should be noted particularly in connection with application on screens and windows. It will be found that those surfaces exposed to the sun will have to be coated with considerable frequency, whereas similar areas on less exposed elevations will remain effective for several months. In this connection it should be borne in mind that DDT will never remain effective for long periods of time on surfaces which are subjected to considerable weathering. The published figures on lasting power (most frequently ninety days) contemplate areas which are reasonably sheltered.

3. The Greendale Homes, a public housing project in Milwaukee, has experimented extensively with mixing 5 per cent of a DDT solution in every gallon of interior paint used on the project. The management reports that "for six months after a wall is painted, flies will be killed on contact."

4. There have been many disappointments in regard to the effectiveness of the use of DDT alone for the control of cockroaches. It apparently is no better than sodium fluoride and it has been found necessary to use solutions as strong as 10 per cent to get results. A solution this strong, if carelessly applied, however, may do injury to humans or animals and it should be emphasized that the *manner of application* for the control of a great many insects is as important as the material used. A haphazard application of any material, no matter how good, will not eradicate effectively, and, in the case of such poisonous sprays as a strong solution of DDT, careless application can be of vital importance in areas where food products are present.

5. In order to get a residual effect of three to four months on surfaces not subject to weathering or washing, it is necessary that an application or dosage of 200 milligrams of DDT per square foot be applied. To obtain such a deposit without runoff it is necessary to apply at least a 5 per cent concentration in oil or water. If it is intended that the application control flies and other insects attracted to light it is most important to cover the spaces toward the light. Mosquitoes and other insects which seek dark places require somewhat different treatment.

6. Strong solutions of DDT in oil, as a dust, or in an emulsion are effective as a contact or residual poison for bedbugs. If the treatment is given and the residue left in place it can be effective for as long as six months.

7. In controlling ants an oil solution containing DDT should be sprayed to hit as many of the ants as possible and to wet thoroughly their runways and other places which they frequent. The residual effect of such treatment runs up to several weeks.

8. Research as to the toxicity of DDT indicates that, in general, powders containing up to 10 per cent DDT for such purposes as dusting clothes appear to offer no serious hazard and fly spray containing 1 per cent DDT in kerosene is also comparatively safe although skin irritation may occur following heavy exposure. Massive doses are toxic, however, and particular care should be exercized to see that it is used only under conditions which preclude contamination of food.

Aerosol Bomb

Another new and highly publicized technique of pest control is the so-called "aerosol bomb" for which advertisements are making broad claims in all sections of the country. The aerosols are, in general, merely an air colloid liberating either solid or liquid substances and the most common aerosol is produced as a result of a change from the liquid stage to the gaseous stage of a compressed gas containing dissolved chemicals or substances of low vapor pressure. These substances must be of such a nature that they expand to a very finely divided state if the colloidal property is to be achieved. Good aerosols result when the insecticidal ingredients are truly soluble in a liquified gas. The most commonly used gas is Freon-12 which expands 260 times its volume and in expanding blows apart the insecticidal chemical projecting it into the air in a very finely divided state. The particles float in the air for a period of approximately 20 minutes and are carried by drafts and other air currents in all directions and into the cracks and crevices where insects normally hide. This colloidal technique has proved extremely effective in enclosed areas where the effect is not immediately dissipated. Normally the dispenser should be operated from the center of the enclosed

space for a period of not more than four seconds for each 1000 cubic feet. Spraying should not be directly on surfaces.

If used properly, one pound of insecticidal aerosols can be compared to two gallons of liquid insect spray although the normal house fly "flit gun" technique is about one-tenth as effective as the aerosol operation. This aerosol, although a colloid, acts much like a heavy gas and in some cases when it has been liberated on the top story of a building it has destroyed insects in the basement.

While this technique is an innovation of extreme importance, it also is not by any means the final answer. The Agricultural Research Administration, as a matter of fact, has determined that the aerosols are not very effective against crawling insects such as cockroaches, bedbugs, and brown dog ticks, and also that they are not highly recommended as a means of applying the insecticidal residues on surfaces for killing cockroaches, bedbugs and ants where direct application is preferred. Its value, of course, in regard to flies and mosquitoes, for example, is that one does not have to search for the insects' hiding places and breeding spots in order to get at them. The ingredients used normally have been a combination of DDT (for residual effect) and pyrethrum concentrate 20 per cent (for knock-down power). Cyclohesanone is used as a solvent for DDT in preparing it for use in combination with the Freon propellent.

ANTU

There also has been a new discovery in the field of rodenticides and a great deal of publicity has been given to a new rat poison known as ANTU (alphanaphthyl thiourea). It has had considerable success, both in regard to voluntary acceptance by rats and in regard to toxicity. Its cost is not too high. It has become a virtual specific for the gray Norway rats (perhaps the most common) but for some reason it has not been as effective when used on the Alexandrinus rat which requires almost fifty times as much to kill it. Interest in this product has come about through two peculiar qualities which it possesses:

1. Rats are known to have high capabilities in regard to the self selection of diets; that is, in the ability to choose nutritive substances and avoid harmful ones. ANTU, however, is sufficiently acceptable to rats so that they take it without hesitation.

2. ANTU has strong emetic properties which protects most mammals from it. Humans retch immediately following even a small dosage and there has been no recorded instance of a human fatality. Dogs and cats also retch quickly enough so that they usually are protected, though large applications of ANTU have resulted in deaths of a few such pets in the neighborhood. Rats are not similarly protected against ANTU because of a biological peculiarity which renders them unable to vomit.

ANTU was developed largely during the war as the result of a frenzied study by scientists when it was realized that we were in a very vulnerable position with respect to the control of rats and ratborn epidemics, because Red Squill, the staple rat poison, went off the market when Mediterranean sources of this root were closed during the blockade by the Axis powers. Most other rodenticides are dangerous to use and ANTU has been the answer to the shortage of Red Squill and has, for most uses, supplanted it even though it is now becoming available again. The principal objection, however, to the use of ANTU is that it is a very slow poison. Where the rat infestation is light very few dead rats are found after its application and the time required to kill is from three to seven or even eight days after dusting. It is too early to know whether or not rats may be able to build up a tolerance to this chemical as they have to arsenic and other poisons. While this rodenticide is of

high interest to property managers, its use is not practical in small areas. In general, minimum applications should concern a full city block in order that real effectiveness be secured.

1080

Another new rat poison which has been developed during the last year is that which is called "1080." Perhaps better known than ANTU, because it was recently discussed in one of the national slick paper weeklies, it apparently is superior in toxicity to ANTU and is equally "acceptable" to rats. It, however, has the strong disadvantage of being highly toxic also to human beings and other mammals. It can be used only by experts under carefully controlled conditions.

Important to Managers

As the result of the great amount of publicity devoted to DDT and Aerosol in newspapers and national magazines, as well as the extensive advertising campaigns to sell these products, the public has become highly "pest minded." Property managers must be prepared, therefore, with technical information on the new materials and techniques relating to insecticides and rodenticides. Tenants and owners alike have been impressed with the magic qualities of these new materials and are experiencing a tendency to feel that any infestation in the buildings they own or occupy is the result of neglect on the part of the manager—neglect either to inform himself about these new techniques or how to use them properly. This column will continue to publish notes on the subject which appear to us to be helpful. We would appreciate it if readers who have experimented with these new techniques or who encounter information or tests not generally available would communicate information to this column.

Removing Oil and Rust Stains from Cement

To remove rust marks from concrete driveways and sidewalks, the most effective technique is the use of a poultice consisting of one part sodium citrate dissolved in six parts of water to which has been added six parts of glycerine. A portion of this solution mixed with powdered whiting or hydrated lime in sufficient quantity to make a paste should then be spread over the affected area rather heavily. This poultice must be left in place for some time, perhaps as long as several weeks. When dry it should continue to be moistened with the liquid mixture described above.

Oil stains on concrete can be removed best by covering the affected area with powdered whiting alone. This must be left in place for some time and also must be renewed periodically, as it is no longer effective after becoming saturated with oil. Proper procedure, therefore, would require sweeping it up and applying a new layer of whiting, perhaps every few days. After the whiting has been removed for the last time, the area should be scrubbed with a strong solution of washing soda.

Roller Stipple vs. Brush Stipple

Dear Mr. Nelson:

Sometime ago I read a series of articles in the Maintenance Exchange Column regarding the effectiveness of the roller stippler. I have had a good deal of experience with this tool within the past several years and thought you might be interested in my reaction.

I have used the roller stippler and although I have obtained a "passable job" I am sure that the same job done with a stippling brush would be more attractive and the surface would stand up longer.

By using a high grade of stipple paint and a stippling brush on a good foundation, the painted

surface has remained in good condition from four to seven years. The brush stipples the paint evenly and with uniformity when properly used. On the other hand, this same paint, roller stippled, looks "washed out" or shady. The roller has a tendency to leave a "splash" or "spread on" stipple. Careful examination of the stippled surface will show that the stipple is not as close as that done by the brush. Also, the space between each stipple does not have sufficient paint to withstand continual washing.

The stippling brush can be cleaned in one half the time it takes to clean the roller stippler. The brush can be washed by submerging the bristles in benzine and rubbing the hand along the bristles, which loosens the paint and removes most of it from the brush. Follow this with a soap water wash and rinse, wipe dry with a cloth, and the brush can be used again immediately. This is not so with the roller. The roller stippler is cleaned in much the same manner, but in order to get it clean, it must be washed several times in benzine, each time squeezing the paint out. Then it must be washed in soap water, rinsed, and allowed to dry before being used again.

The roller stippler is faster than the brush stippler and, in my opinion, is suitable for a fast, cheap grade of work, or for work in high places where it is not very noticeable and where the surface is painted fairly often. When a lasting, washable, high-grade surface is desired, however, the roller stippler is false economy.

Very truly yours,
F. D. Cottrell

The roller strippler is still a highly controversial tool and there are many *pros* and *cons* regarding its effectiveness. Mr. F. D. Cottrell writes in support of the *cons*. Have we any *pro* readers who can give us information on the successful use of this stippler? This Column would like to receive letters from all those who have had experience in its use.

Flooring Tests

A series of tests conducted by the Midland Chemical Laboratories on different types of flooring materials have recently come to our attention. They have been particularly interesting to us because a great deal of informal experimentation in regard to flooring problems took place all over the country, in the few years immediately preceding the war, in office buildings, apartment buildings, hotels, department stores and even college dormitories. Most of these experiments were extraordinarily inconclusive. Certainly no "ideal" material has yet been developed. It apparently is impossible to combine in the same material the maximum qualities of abrasiveness, attractive appearance, ease of cleansing, low water absorption, high resistance to abrasion, and high resistance to indentation. Despite the recent innovation of "plastic flooring" and other new compositions, it is still necessary in reflooring a given area to make some sort of compromise selection—that is, to select a material having those qualities which appear most important for the use and position selected. The various factors such as original cost, beauty, and ease of maintenance must be balanced carefully to harmonize most closely with the requirements of the given location.

We all have seen in the past few years a great many buildings (particularly factories and department stores) in which several reflooring operations have had to be performed. The operators have, in other words, done their experimenting on the floor, so to speak,—the most expensive of all possible methods. A careful study, however, can allow the manager to by and large predetermine the relative value of the various features of the alternative flooring from which he has to choose. While there is still a considerable amount of uncertainty about many of the materials used for flooring under unusual wear, it is now at least possible to eliminate part of the "guess" in flooring selection; to do a more intelligent job than was done by many operators in the prewar years.

To this end we are reproducing herewith some of the results of the Midland tests. The factors of original cost of various floor-

ing materials, of their maintenance cost and decorative value are comparatively well known. To these factors we are now able to add information about three other important phases relating to flooring value: water absorption, resistance to abrasion, and resistance to indentation.

The following is the result of the absorption test showing the various materials tested together with the percentage of water absorbed by weight in a five-day period:

ABSORPTION TEST

Material Tested	*Percentage Weight Absorbed*
Vitreous Tiles	0.0%
Semi-vitreous Tiles	5.1
Faience Tiles, soft	10.6
Concrete	9.6
Magnesite (hard composition)	13.1
Linoleum	6.2
Cork	25.5
Rubber	0.5
Wood	66.1
Asphalt and Mastic	0.8
Marble	0.1
Terrazzo	2.6
Slate	0.3

It will be noted that aside from wood, cork, magnesite and very soft tile (and to some extent concrete) all other materials show a very acceptable record. Some of these figures are particularly interesting. For example, the comparatively high percentage of absorption by linoleum (6.2 per cent) as opposed to the low absorption by rubber (0.5 per cent), and asphalt (0.8 per cent). The sharp difference between terrazzo and marble is also interesting—2.6 per cent for the former and 0.1 per cent for the latter.

The following chart shows the results of an abrasion test involving the same materials subjected to 20,000 revolutions of an abrasive wheel, the right hand column indicating the percentage loss by weight at the end of the test:

ABRASION TEST

Material Tested	*Weight Lost*
Vitreous Tiles	4.5%
Semi-vitreous Tiles	8.6
Faience Tiles	15.3
Concrete	16.8
Magnesite (hard composition)	60.4
Linoleum	72.9
Cork	44.2
Rubber	19.8
Wood (maple)	33.8
Asphalt and Mastic	80.1
Marble	23.3
Terrazzo	16.1
Slate	58.2

In this test results were close to the popular conception of the wearing qualities of the materials in question. It is, however, extremely interesting to note the excellent record which rubber made in losing only 19.8 per cent of its weight when compared with marble which lost 23.3 per cent and as compared with linoleum which lost 72.9 per cent, slate which lost 58.2 per cent, and asphalt which lost 80.1 per cent. Its record was almost as good as that of terrazzo (16.1 per cent). The poor records of linoleum, asphalt and slate are also items of considerable interest.

The following chart is a record of the indentation test made on various flooring materials after subjecting them to a 75 pound weight resting upon a one inch caster over a period of 48 hours. The first column shows the materials tested and the second shows the depth of the permanent depression made by the caster in percentage.

INDENTATION TEST

Material Tested	*Depression Percentage*
Vitreous Tiles	0.0%
Soft Tiles	0.0
Rubber	1.0
Linoleum	6.2
Cork	4.0
Magnesite (hard composition)	0.0
Asphalt and Mastic	8.0
Marble, Terrazzo, Cement	0.0
Wood	0.0

In this test all items with the exception of asphalt, mastic, cork, linoleum and rubber showed no depression whatsoever. The rubber depression was minor whereas the depressions graded in asphalt, mastic, cork and linoleum were disfiguring.

It is clear that the purpose of these tests by the Midland Laboratories was to demonstrate the superiority in these regards of vitreous tiles. It appears, however, that the tests were fairly made and there is no reason to suspect that this demonstration detracts from the value of the tests as a whole. They are, at any rate, interesting data which the property manager would do well to add to his fund of maintenance knowledge.

Announcing

THE FIRST 1946 INSTITUTE COURSE

Arrangements have been completed through Mr. R. W. Lackmond, president of the Birmingham, Alabama, Real Estate Board, to offer the Institute's lecture course in

"Principles of Real Estate Management"

AT THE

THOMAS JEFFERSON HOTEL, Birmingham, Alabama
during the week APRIL 29 to MAY 4

The renowned faculty team of James C. Downs, Jr., and Delbert S. Wenzlick will again conduct the course. They will be assisted by Louis Maginn, president of Franciscus-Maginn, Inc., of St. Louis, and Kendall Cady, a director of Real Estate Research Corporation in Chicago.

Case studies for the course will be a two-story office and store building and a 12-unit apartment building. A textbook containing 250 pages prepared especially for the course will be covered by the tuition fee of $50.

For an outline of the lecture subjects and any additional information write to the

INSTITUTE OF REAL ESTATE MANAGEMENT

22 WEST MONROE STREET CHICAGO 3, ILLINOIS

WHAT TO READ

By *C. M. Jones*, EDITOR

Pertinent Comments on Books, Recent Surveys, and Articles of Interest to Property Managers

Book Reviews

PLANNING YOUR HOME FOR BETTER LIVING, by CLARENCE W. DUNHAM and MILTON D. THALBERG. McGraw-Hill, N. Y. 1945c. 278 pp. $4.00.

The desire to create a home is universal, yet most of us know so little about house construction that we buy or build half blindly. This book breaks down the construction into simple elements that are easily understood. Specific information is given, from the selection of the land to the final matter of painting and decorating. Sound counsel on legal matters and financing is also given. Special emphasis is placed upon the planning and thinking that should precede construction or purchase. The many photographs, drawings, and floor plans, help in presenting the material in a clear and understandable manner. The authors conclude their preface with this statement: "We trust that we shall help you to reach your goal of owning a home for we believe that a home is an excellent investment financially as well as psychologically. It tends to make us better, more stable, and happier citizens of this great country of ours."

ESTABLISHING AND OPERATING A REAL ESTATE AND BROKERAGE BUSINESS, by WALTER F. HICKERNELL. Published for United States Armed Forces, by Training Division, Office of Personnel, Coast Guard Headquarters, Washington 25, D.C., 1945. 162 pp. $0.35.

This is one of a series of books available to members of the Armed Forces who wish to inform themselves about various civilian occupations and businesses. For those veterans who are thinking of establishing a real estate office, there is a list of questions at the beginning of the book. If these are answered correctly according to the answers to be found on a later page, the man is qualified to undertake a career in this field. Every test available should be tried to make certain that the beginner has the necessary qualifications. The scope of the book is as large as the field which it covers. Text material is based on actual experiences of real estate and insurance brokers, who have been in the business for years and know the value of getting the right start. In each chapter of the book are questions and answers so that the reader may test himself. There are also many suggestions for further reading. At the close of the book is a final check list of things to be remembered. This book will be a great help to the veteran in deciding whether real estate is the vocation to which he is best adapted; the field in which he is most interested and one which his intelligence and capabilities fit. If he desires to make this field his life work, the book will prove a great help in getting him off to the best possible start.

BUILDING CONSTRUCTION ESTIMATING, by GEORGE H. COOPER, McGraw-Hill Book Co., N. Y., 1945c. 282 pp.

Here is a textbook on estimating that should establish new standards in this field, because of its complete treatment of the subject and its specific handling of all the essentials, with the omission of cumbersome details. It is intended as a standard textbook for a full course in technical and vocational schools. Many books on estimating consider in great detail the design and construction of buildings, mathematics, specification writing, mechanical trades, and elementary plan reading. The present book is based on the principle that a textbook should be complete only in the matters before the class and should not treat in detail anything that is regularly handled in other classes. The aim is to present in orderly sequence a well-rounded course covering the everyday work of the building contractor's estimator. The first nine chapters discuss contracting as a business, building codes, plans, specifications, contracts, and the general technique of estimating. The following chapters deal with the estimating of work that is customarily performed by the contractor's own men. The final chapters treat of the work usually done by the subcontractors' men. Numerous illustrations are included, two sets of plans, many specimen estimates, and all essential reference data.

TOMORROW'S HOUSE, by GEORGE NELSON and HENRY WRIGHT. Simon & Schuster, N. Y., 1945. 214 pp. $3.00.

All through the war a great many people have been saving everything they have—from dreams to war bonds—for their new home. The dreams include everything ultra in postwar miracles, and here is a book to take those dreams in hand and pin them to the drawing board.

If you are interested in the pillared galleries of the traditional southern mansion; the coy dormers of the Cape Cod cottage; or the low eaves of the farmhouse, this is not your book. This is truly the guidebook for the house of tomorrow—a house built around and for the people who will live in it rather than around an architect's fancy of "what is good this season."

Each living unit is treated carefully in its own chapter. The living room is described and planned as a place for each individual to "live;" the dining room—well, that's to be or not to be; the startling disclosure is made that bathrooms are out of date (and we thought surely they were here to stay) but the remedy is included; and so on through the entire floor plan. All the details of lighting and heating are carefully considered; storage space comes in for its deserved allotment; of course, windows take an ever increasing place in modern architecture, and they are given a full chapter.

The latter part of the book spares no punches in telling Mr. Average Man just what he must do (and pay!) if he wants to follow the author's suggestions and build *the* home for himself and his family. It devotes much interesting space to the likelihood of immediate labor-saving devices and miracle materials and points out clearly the value of those which are time tested.

Each section is preceded by a series of photographs illustrating the ideas of the text. The majority of these are extreme for the sake of emphasis, but they do much to add to the graphic color of the book. Many of the nation's foremost architects are herein represented by their outstanding work. Notable among the illustrations is a two page spread of Frank Lloyd Wright's "Falling Water."

If you are interested in learning the inside as well as the outside of the modern

trend in architecture *TOMORROW'S HOUSE* will prove both interesting and educational. And if you're a stickler for the traditional, pick it up and look at the pictures—you may change your mind.

Article Reviews

GREEDY NEW LANDLORDS ARE ENDANGERING YOUR FUTURE IN BUILDING MANAGEMENT, by MATTHEW ELY.

In years of plenty the Golden Rule is likely to slip into the hazy background. Landlords and building managers are experiencing their heyday in the rental situation, and there are disastrous results in many cases. As the author points out, many superintendents seem to find a sadistic pleasure in turning space-seekers away with a curt "no vacancies." We are prone to believe that this is the unusual rather than the usual, but nevertheless one disagreeable encounter with a landlord will often set the case for the twenty-five who are anxious to please. Now, even though we have no empty apartments or offices today, is the time to assure ourselves a long and satisfied list of clients for tomorrow. Government agencies will be vacating thousands of office rooms throughout the country; their families will be leaving a similar number of apartments empty. In spite of the fact that it is difficult to foresee the day when renters will be *seeking* tenants, it is inevitably in the future.

Because so many buildings have been sold as a result of depression years' foreclosures, there is a new type of owner in the real estate field. Some of these, whether many or few, just do not understand the basis of cooperative building management with the result that the rising antagonism of the tenants will be directed toward management as a whole. It is a feeling which if rooted deeply enough will carry over into future years and give those who view the growth of the nation along socialistic lines another link in their mail.

It would seem that the logical step would be to draw up a code of ethics to be closely followed by *all* landlords and building superintendents to insure the continuation of public good will and free enterprise in the field of real estate management.

An interesting note recommends reference to Carlisle Davidson's Case Study in Public Relations, pp. 38-40 in the December, 1945, issue of this magazine. Buildings and Building Management, February, 1946, pp. 23-24.

MODERN LIGHTING A FACTOR IN RENTALS, by R. L. OETTING.

Businessmen realize that the rental situation is acute in office and store buildings as well as apartments and residences. This factor, perhaps, accounts more strongly than any other for the apparent indifference of many managers and owners to concentrate on immediate modernization of their buildings—taking into account, of course, the continued scarcity of necessary supplies.

As the author points out, a large number of office buildings are greatly in need of revitalization. Naturally no blanket plan can be evolved which would cover all necessary innovations. Undoubtedly lighting is one of the most compelling problems to be faced, and fortunately one of the easiest to be solved.

General Electric and other lighting groups conducted a survey of office managers during the war years, and the results as set forth by Mr. Oetting contain valuable information for the owner or manager interested in this phase of improvement.

In several cases where the owners did not take the initiative in planning new lighting

facilities, the tenants instigated the movement and secured the desired results. However, in the majority of cases the costs were paid by the owner. Once the lighting was installed acclamations of the new methods were unanimous.

The author does a good job of describing what the new techniques have already accomplished, especially as used in industry through the war years. Also he does not forget the decorative advantages of the fluorescent lights.

No one will deny that a competitive real estate market will eventually be back with us. Lighting is just one of the factors which will prove conclusive in the success of an owner or manager in securing and keeping his clients, but it is an all important one. *Skyscraper Management*, January, 1946, pp. 36-37.

MODERNIZING MAIN STREET.

Here is an idea for property managers who are planning new store fronts. In Sacramento, California, a plan for group store modernization was developed, which has now reached its final stages, and has attracted favorable attention throughout the state. This is the way it started. A group of commercial property owners met to determine how their street might give more successful competition to another street, known throughout the city as the "hot" section, which was most in demand by chain stores. After a survey to determine how many owners planned on postwar modernization, and how much they intended to spend, a contract was drawn up, obligating the signer to spend not less than a designated amount per front foot, in remodeling the front of his property. Photographs were taken of each block in the area, an architect was engaged to make sketches and estimates. The owners were given a choice from the many new types of building materials. When shown the amazing changes which can be effected at a moderate cost, most owners are willing to sign the contract immediately. Each owner will recognize the fact that remodeling of a neighboring property will directly alter the value of his own. *National Real Estate and Building Journal*, September, 1945, pp. 28-30.

UNDERGROUND HEATING SYSTEM MELTS SNOW AS FAST AS IT FALLS, by ERNEST A. DENCH.

The heating system now used for inside a factory can be extended outdoors without difficulty. After a trial and error period by several industrial firms and at least one home owner, sufficient facts are available to convince the most skeptical owner or manager that this new method of snow removal is no longer just an idle dream. Highway engineers and airport operators are giving it serious consideration. The technique to be followed is comparatively simple. Steam or hot water from a central heating plant, is circulated in a network of pipes of a predetermined size, located three feet apart. To be practicable the circuit should be no more than 1000 feet long. Each circuit requires an underground heat exchanger, where the steam is converted into hot water, and pumped into the pipes. Temperature of the water needs to be between 40 and 45 degrees. Two successful installations of this system are described in this article, and the author cites definite measurements and prices. *Buildings and Building Management*, October, 1945, pp. 46-48.

News of the Chapters

New England

A very interesting meeting was held last March which was devoted to President Delbert S. Wenzlick's visit and a report from him on his plans for the Institute.

The New England Chapter, during the last few years, has had few meetings other than their annual meetings. This was due largely to the fact that the two major groups comprising the New England Chapter are some distance apart, namely, Connecticut and Massachusetts. With wartime restrictions on travel, little could be done to effect meetings with proper attendance.

At the annual meeting held January 3, 1946, considerable discussion was given to the planning of more frequent meetings. To accomplish this it was decided to alternate the meetings between Massachusetts and Connecticut. This should substantially increase the attendance.

Some of the Chapter's objectives are:

1. To ask its members to contribute their management forms and aid in the program for standardization of forms being conducted by the Institute's Division of Standards and Planning. Members should send their forms to James M. Bowler of Brighton, Massachusetts, who is a member of the Advisory Board of the Division;
2. To exchange thoughts, ideas and experiences;
3. To increase membership;
4. To acquaint the public with the definition of a "CPM" and the aims of the Institute. (Anything in this direction will be submitted to the headquarters office for approval.)
5. To follow Federal and State legislature affecting real estate and to either favor or oppose as a group.

The Chapter has approved that the Connecticut division or Massachusetts division may hold informal meetings of their own for local benefit and to advise the New England Chapter of any important developments.

RALPH T. HORN, *President*
January 28, 1946

Los Angeles

Our December meeting was devoted to business, election of officers, yearly reports and plans for 1946. The Chapter closed the year with cash on hand and all bills paid.

At the November meeting Mr. M. H. Driggers, Assistant Regional Director of the National Housing Authority, gave a very informative talk about housing needs and problems in this area.

In summing up the Chapter's performance in 1945, President Huntsberger called attention to the fact that our members were filling the following important positions:

President of the Downtown Business Men's Association.
President of the Wilshire Chamber of Commerce
Vice President of the Los Angeles Chamber of Commerce
Member of the Realtors' Washington Committee of the National Association of Real Estate Boards
Regional Vice President of NAREB
Regional Vice President of the Institute of Real Estate Management
Regional Vice President of the Society of Industrial Realtors
Regional Vice President of the National Institute of Real Estate Brokers
Vice President of the Los Angeles Realty Board

In addition, the Chapter has seven representatives on the Directorate of the Los Angeles Realty Board.

STEWART L. CREBS, *President*
January 10, 1946

FORWARD STEP

As a public service, the Institute of Real Estate Management has undertaken to designate as "Accredited Management Organizations" those management agencies which meet its established standards of ability and integrity. No charge is made to the management organizations. The following minimum standards have been established for an Accredited organization:

- **It shall be reputably engaged in the business of property management in the locality in which it operates;**
- **Its management policies and techniques shall be established by individuals who are experienced and qualified in property management;**
- **It shall cover all money handling, accounting, and disbursement personnel by proper and adequate fidelity bonds;**
- **It shall segregate the funds of its clients, at all times, from those of the organization by deposit in a separate bank account which shall always contain 100 per cent of the funds of every client;**
- **It shall not receive a commission, rebate, discount or other benefit without the client's knowledge;**
- **It shall not make any misleading or inaccurate representation to the public;**
- **It shall have a Certified Property Manager in an executive position relating to its property management activities;**
- **It or one of its principals shall be a member of a local board, or an Individual Member, of the National Association of Real Estate Boards.**

The Institute will carry out a program designed to acquaint the property owners and investors with the safeguards provided through management organizations which meet the Accrediting requirements. The program is aimed at protecting the public from unethical and improper management practices and techniques.

Each organization designated as an "Accredited Management Organization" will publicly display the Institute's annual certificate of Accrediting. It will be entitled to the use of the official emblem or designation, "Accredited Management Organization," or "AMO," on its signs, advertisements, letterheads and forms. In addition, the Institute will notify the public of Accrediting through the press and other media.

The first list of Accredited Management Organizations will appear in the June 1946 issue of this magazine. Public announcement will be made following the meeting of the Institute's Accrediting Committee to be held early in May.

Application form can be secured by writing to the headquarters office

22 WEST MONROE STREET, CHICAGO 3, ILLINOIS.

Important for Your Management Library

Is the series of Fundamental and Standards Manuals published by the Institute of Real Estate Management.

The first two in the series listed below were issued in 1945. Six additional Manuals will be published in 1946.

No. 1	**PLASTER**
No. 2	**WATER PAINTS**
No. 3	**LAWNS AND PLANTING**
No. 4	**WALLPAPER**
No. 5	**MANAGEMENT ACCOUNTING**
No. 6	**FLOOR AND FLOOR COVERINGS**
No. 7	**INSULATION**
No. 8	**PLUMBING**

The Manuals are authentic and comprehensive. They are interestingly written, easy to read, contain explanatory illustrations and treat the subject matter in four sections: (1) historical background; (2) discussion of modern practice in the field; (3) narrative of management procedure for maintenance or operation; and (4) appendix containing reference and technical material.

★

Place your order now for the first eight Manuals. They will be mailed as they are published. Copies may be purchased for $1.00 each. CPMs receive the Manuals as a membership service.

★

Address the Institute of Real Estate Management at 22 West Monroe Street, Chicago 3, Illinois.

New Certifications

Institute of Real Estate Management

The title of "Certified Property Manager" has been conferred upon the following individuals by the Institute of Real Estate Management.

(See pages 152 to 160 inclusive, for a complete list of Certified Property Managers.)

BUCK FENNO,

Siloam Springs, Arkansas.

Born, Siloam Springs, Arkansas, March 6, 1905; operates own business; fifteen years' experience in real estate management including a hotel and cafe, stock ranches, office buildings, residences, farms, tourist court and canning factory; professional territory covers northwest Arkansas, northeast Oklahoma, and southwest Missouri; served as secretary of the Chamber of Commerce at Siloam, 1931, 1932, and 1933; attended University of Arkansas two years; member, Kappa Sigma social fraternity.

GEORGE CARROLL BRUSH,

Los Angeles, California.

Born, Wyoming, Iowa, September 14, 1893; secretary and general manager, The Los Angeles County Medical Holding Corporation, owners and operators of the Wilshire Medical Building; seventeen years' experience in office building management as well as residences, stores, garages, parking lots, apartments and duplexes; professional territory covers Los Angeles County; member, executive committee of the National Association of Building Owners and Managers, and past president of the Building Owners and Managers Association of Los Angeles, California.

WILLIAM FREDERICK KREUTTER,

Denver, Colorado.

Born, Buffalo, New York, July 16, 1896; vice president and treasurer, The Frederick R. Ross Investment Company; second vice president, Denver Board of Realtors, and past chairman of the property management division; president, Denver Realty Associates; over fifteen years' experience in management of apartment houses, residences and commercial properties; professional territory covers the city of Denver and surrounding territory.

W. MAX MOORE,

Denver, Colorado.

Born, Loveland, Colorado, December 7, 1907; owner of Moore Realty Co.; ten years' experience in the management of all types of property; professional territory covers principally the metropolitan area of the city of Denver; attended Colorado A. & M. two and one-half years and University of Southern California one year; past president, Colorado Association of Real Estate Boards; president, Denver Board of Realtors; member, Realtors' Washington Committee, NAREB.

THOMAS J. NORTH,

Hartford, Connecticut.

Born, Woonsocket, Rhode Island, February 5, 1906; property manager for Richard F. Jones, Jr., Realtor; five years' experience in management of industrial commercial and residential properties; professional territory covers Hartford County in the state of Connecticut; B.S. degree in civil engineering from Yale University.

JAMES CRANE,

Washington, D. C.

Born, New York, New York, January 27, 1896; property manager for McKeever & Whiteford; five years' experience in real estate management; professional territory covers Washington, D.C., and nearby Virginia and Maryland.

ROBERT JAMES DOTSON,

Savannah, Georgia.

Born, Savannah, Georgia, August 28, 1903; owner, Dotson Realty Company; twenty-one years' experience in the management of residences, commercial properties and office buildings; principal business connections include life insurance companies, banks, and HOLC; contract property manager, FPHA; professional territory covers Chatham County, Georgia, and adjoining counties; past chairman of property management division, Savannah Real Estate Board; member OPA fair rent committee.

SAMUEL HORNSTEIN,

Savannah, Georgia.

Born, Reading, Pennsylvania, April 3, 1895; resident of Savannah since 1898; owner, Hornstein Realty Company; twenty-eight years' experience in real estate management including business properties, apartments and residences; professional territory covers Chatham County, Georgia, and vicinity; past chairman, Property Management Division, Savannah Real Estate Board.

WALTER P. POCOCK,

Chicago, Illinois.

Born, Chicago, Illinois, April 22, 1918; head of management and insurance departments in the firm of Donald F. Moore, Realtor; five years' experience in real estate management; professional territory covers the south side of Chicago.

WILLIAM WELLES ELSESSER,

Peoria, Illinois.

Born, Peoria, Illinois, May 28, 1900; vice president, Commercial National Realty Co.; past commodore, present secretary, Illinois Valley Yacht & Canoe Club; twenty years' experience in real estate management handling property for individuals, corporations, insurance companies, banks, and loan companies which include apartment houses, individual and multiple residential properties, suburban store and commercial loop properties; professional territory covers greater Peoria.

E. BURBANK SAUL,

Cambridge, Massachusetts.

Born, Waltham, Massachusetts, February 26, 1901; property manager for George A. Giles and Son; five years' experience in management of real estate including residences, stores, halls, lots and theaters; professional territory includes metropolitan and suburban Boston, Norwood, Framingham, and Gardner, Massachusetts, as well as Laconia, New Hampshire; Director, Middlesex Apartment Owners' Association; Director, Massachusetts Real Estate Exchange.

EMIL ERNEST GALLAS,

Lansing, Michigan.

Born, Clare, Michigan, May 11, 1913; manager, property management division, Advance Realty Company; five years' experience in real estate management; professional territory covers Lansing, East Lansing, and suburban properties; attended Flint Junior College two years and University of Michigan one and one-half years; completed Institute case-study course at University of Chicago, 1940; veteran of World War II, Southwest Pacific Theatre of War.

SWEP S. TAYLOR,

Jackson, Mississippi.

Born, Isney, Alabama, December 29, 1890; manager, Deposit Guaranty Bank Building; fifteen years' experience in real estate management; professional territory covers Hinds County, Mississippi; former fee appraiser for HOLC in the state of Mississippi; has served as president and secretary of Jackson Real Estate Board; attended Virginia Military Institute one year and Millsaps College three years.

W. A. KNICELY,

Hastings, Nebraska.

Born, Hastings, Nebraska, October 2, 1889; partner, Wm. M. Lowman & Co.; thirty years' experience in the management of residences, apartment and store buildings; professional territory covers the city of Hastings and vicinity in the state of Nebraska.

JOHN H. ABRAMS,

Camden, New Jersey.

Born, New Haven, Connecticut, May 6, 1897; manager of property management department, Markeim-Chalmers-Ludington, Inc.; three years mortgage servicing and special work in cooperation with FHA on war housing projects; six years' experience in management of residences, apartment and office buildings and commercial properties; president, Canterbury-at-Camden, Inc.; treasurer, Crescent Apartments; assistant secretary and treasurer, East Broad and State Corp.; vice president, Sixty-One Corp.; president Well Realty Co.; professional territory covers South Jersey, Philadelphia and suburbs, and New York City.

HERBERT O. METZGER,

Newark, New Jersey.

Born, Newark, New Jersey, October 3, 1913; property manager for Abeles-Stevens; ten years' experience in real estate management including apartment and office buildings, factory units, stores and residences; professional territory covers Essex, Union, and Bergen Counties; graduate of four-year commercial course offered by the International Accountant Society.

WILLIAM E. BOHLENDER,

Dayton, Ohio.

Born, Dayton, Ohio, September 25, 1896; operates own business under name of W. E. Bohlender & Co.; president and owner, Dayton Finance Corporation; Lt. Col., Field Artillery, U. S. Army, January 7, 1941, to July 7, 1944; fifteen years' experience in real estate management; professional territory covers Dayton and vicinity; B. S. degree in mechanical engineering, Ohio State University.

V. J. BOOTH,

Oklahoma City, Oklahoma.

Born, Moran, Texas, February 24, 1893; owns and operates his own business, The Bond Rental Company; eighteen years' experience in real estate management; professional territory covers Oklahoma City and Oklahoma County; graduate, Oklahoma A. & M. College; completed Institute's management courses offered in Omaha (1944) and Dallas (1945); management service includes business properties, apartments, duplexes and single unit dwellings; member, Society of Residential Appraisers, National Institute of Real Estate Brokers, advisory committee of Oklahoma City Apartment Owners Association and Oklahoma City Rotary Club.

HAROLD F. BRADBURN,

Oklahoma City, Oklahoma.

Born, Baltimore, Maryland, February 3, 1891; operates own business; twenty-six years' experience in real estate management; professional territory covers Oklahoma, Texas, Arkansas, Kansas, Missouri, New Mexico and Indiana; completed Institute's lecture course offered in Dallas (1945); organizer and secretary of Oklahoma City Real Estate Bd., later vice president; organizer of Retailers Association; membership and acting secretary of Oklahoma City Chamber of Commerce; organizer and manager of Taxpayers Efficiency League.

E. L. GRAGG,

Oklahoma City, Oklahoma.

Born, Wellston, Oklahoma, January 7, 1897; president, Realty, Mortgage and Sales Company; thirteen years' experience in real estate management including residences, apartments, store buildings and one motor hotel with ramp; professional territory covers the city of Oklahoma and vicinity; active member, Oklahoma Bar Association; member, Executive Association of Oklahoma City; president in 1937 and president for 1946, Oklahoma City Real Estate Board; past president, Oklahoma Mortgage Association.

W. J. BASHAW,

Tulsa, Oklahoma.

Born, North Hudson, New York, 1894; property manager, Mager Mortgage Company; fifteen years' experience in real estate management; principal business connections include several life insurance companies, investment companies and savings and loan associations; professional territory covers metropolitan Tulsa.

OLIVER S. BLACK,

Tulsa, Oklahoma.

Born, Camargo, Oklahoma, August 28, 1895; property manager, Adams and Leonard; twelve years' experience in real estate management; principal business connections include Prudential Life Insurance Co., HOLC, FHA, and FPHA; professional territory covers northeast Oklahoma.

RICHARD H. CHAUNCEY

Tulsa, Oklahoma.

Born, Carrollton, Missouri, January 15, 1908; property manager for Adams and Leonard; ten years' experience in real estate management; professional territory covers the city of Tulsa; attended for four years, Oklahoma School of Accountancy, Law and Finance; treasurer of Tulsa Real Estate Salesman's Association, 1940-42; U. S. Navy veteran, World War II.

G. H. GALBREATH.

Tulsa, Oklahoma.

Born, Ohio, March 14, 1892; president, G. H. Galbreath Company since 1933; thirty-two years' experience in real estate management including apartment buildings, office buildings, hotels, commercial, industrial and residential properties; professional territory covers Tulsa, Oklahoma, and vicinity.

WADE C. WHITESIDE,

Tulsa, Oklahoma.

Born, Montgomery County, Missouri, October 9, 1886; member of the firm of Whiteside and Whiteside since 1919; fifteen years' experience in real estate management including residences, duplexes, apartment buildings, apartment hotels, small hotels, tourist courts, office buildings, warehouses, theater

buildings and stores; professional territory covers metropolitan Tulsa and northeastern Oklahoma; past president, Tulsa Real Estate Board and Oklahoma Real Estate Association; member, Tulsa City and Regional Plan Commission, 10 years; member, Tulsa Park Board, 12 years.

FRANCIS H. JACOB,

Pittsburgh, Pennsylvania.

Born, Pittsburgh, Pennsylvania, January 31, 1902; president since 1932, T. E. Clinton Co., Inc. which will celebrate its fiftieth anniversary this year; twenty-two years' experience in real estate management; professional territory covers Homewood, Brushton, and eastern section of Pittsburgh including Penn Township and adjoining suburbs; director, Homewood Board of Trade; secretary-treasurer, Penn-Brooks Corp.

G. ROBERT BERRINGER,

Wilkinsburg, Pennsylvania.

Born, Hannatown, Pennsylvania, April 29, 1897; operates own business; nineteen years' experience in real estate management; professional territory covers Pittsburgh, Wilkinsburg, Swissvale, Edgewood, Forest Hills, and Penn Township; past president, Wilkinsburg Lions Club; member, American Legion, Chamber of Commerce and Edgewood Country Club.

RAE A. EASLEY,

Corpus Christi, Texas.

Born, Chillicothe, Texas, August 11, 1896; has operated Rae Easley Company for eighteen years; fifteen years' experience in real estate management; principal business connections include State National Bank, Corpus Christi Bank & Trust Co., Stewart Title Guaranty Company; professional territory covers south Texas; attended University of Arkansas; for fifteen years, member of Appraisal Committee, Corpus Christi Real Estate Board.

ERVIN W. ATKERSON,

Dallas, Texas.

Born, New Haven, Kentucky, January 23, 1900; treasurer and manager of investment department, Republic National Life Insurance Company; fifteen years' experience in real estate management; professional territory covers Texas and Missouri; former president, Real Estate Board of Phoenix, Arizona.

J. A. BURNEY,

Dallas, Texas.

Born, Limestone County, Texas, January 1, 1899; partner, Banks-Burney Company since its organization in 1939; thirteen years' experience in real estate management; professional territory covers the city of Dallas and vicinity.

JESS LAFFERTY,

Dallas, Texas.

Born, Pilot Point, Texas, May 25, 1903; owner, Jess Lafferty Co. organized in 1940; eight years' experience in real estate management; professional territory covers city of Dallas and vicinity.

J. W. LINDSLEY, Jr.,

Dallas, Texas.

Born, Dallas, Texas, June 5, 1904; partner, J. W. Lindsley & Company; five years' experience in management of residence and business properties; previous seventeen years associated with company devoted to insurance business; professional territory covers city and county of Dallas; director, Dallas Real Estate Board; member, Society of Residential Appraisers; A.B. degree from University of Texas.

JOSEPH R. SMITH,

Dallas, Texas.

Born, Birmingham, Alabama, June 24, 1898; operates own business under the name of Joseph R. Smith & Co.; associated, Jemison Realty Company, Birmingham, 1923-1934; HOLC Regional manager in Dallas, 1934-1945; twenty-two years' experience in real estate management; professional territory covers Texas, Oklahoma and New Mexico; director and organizer of north Texas chapter, Society for the Advancement of Management; conducted courses in "Conference Leadership Methods," "Human Relations in Business," and "Approved Reconditioning Methods" as well as nine-month course in "Residential Real Estate," and many others; attended University of Alabama for two years, left to enlist in AEF; member, D.K.E. social fraternity, Redstone Club, Birmingham, and Dallas Athletic Club.

E. MORGAN TOWNSEN,

Fort Worth, Texas.

Born, Lampasas, Texas, March 10, 1901; partner since 1932, Bryan, Gregory & Townsen; twelve

years' experience in real estate management; professional territory covers Fort Worth and vicinity; past president and present director, Fort Worth Real Estate Board; past president and present director, Texas Real Estate Association; chairman, City Zoning Committee, Fort Worth.

WILLIAM B. UHLHORN,

Harlingen, Texas.

Born, Memphis, Tennessee, November 21, 1920; owner, Uhl-Horn Realty Company; four years' experience in real estate management; professional territory covers Cameron, Hidalgo, Willacy and Starr counties in the state of Texas; three years pre-law education; instructor, U. S. Army Ordinance School, World War II; secretary-treasurer, Harlingen Real Estate Board; state director, Texas Junior Chamber of Commerce; president, Harlingen Junior Chamber of Commerce.

W. VERNON WALSH,

Harlingen, Texas.

Born, St. Louis, Missouri, May 21, 1904; owner, W. Vernon Walsh Realty Co.; five years' experience in real estate management; professional territory covers Cameron, Hidalgo, Willacy and Starr counties in the state of Texas; past president, Harlingen Real Estate Board; regional vice president, Texas Real Estate Association; president, Rio Grande Valley Flyers Association; district governor, Texas Private Flyers Association; director, Harlingen Chamber of Commerce.

Statement of the Ownership, Management, Circulation, Etc., Required by the Acts of Congress of August 24, 1912, and March 3, 1933

Of The Journal of Property Management published quarterly at Chicago, Ill., for October 1, 1945

State of Illinois } ss.
County of Cook }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Olive Dyer, who, having been duly sworn according to law, deposes and says that she is the editor of the Journal of Property Management and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher Institute of Real Estate Management, 22 West Monroe St., Chicago, Ill.; Editor, Olive Dyer, 22 West Monroe St., Chicago, Ill.; Managing Editor, James C. Downs, Jr., 38 S. Dearborn St., Chicago, Ill.; Business Manager, James C. Downs, Jr., 38 S. Dearborn St., Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Institute of Real Estate Management is a nonprofit organization located at 22 West Monroe St., Chicago 3, Illinois; Delbert S. Wenzlick, 3658 West Pine Blvd., St. Louis 8, Missouri, President; T. H. Maenner, 707 City Natl. Bk. Bldg., Omaha, Nebr., Vice President.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not the only list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

OLIVE DYER,
Editor

Sworn to and subscribed before me this 24th day of October, 1945.
MABEL L. DEYOUNG (Notary Public)
(My commission expires August 25, 1945)

National and Chapter Officers

Institute of Real Estate Management

NATIONAL OFFICERS, 1946

PRESIDENT

DELBERT S. WENZLICK
3658 W. Pine Blvd., St. Louis, Mo.

VICE-PRESIDENTS

* C. ARMEL NUTTER
Central Atlantic Region
509 Cooper St., Camden, N. J.

* J. WALLACE PALETOU
South Central Region
714 Union St., New Orleans, La.

WILLIAM W. BARENDRICK
Northwest Region
200 Wilcox Bldg., Portland, Ore.

* WILLIAM J. PORTER, JR.
Great Lakes Region
1016 Prudden Bldg., Lansing, Mich.

STUART BONDURANT
Southeast Region
210 W. Fourth St., Winston-Salem, N. C.

* STEWART L. CREBS
Southwest Region
124 S. La Brea Ave., Los Angeles, Calif.

* RICHARD F. JONES, JR.
New England Region
49 Pearl St., Hartford, Conn.

THEODORE H. MAENNER
North Central Region
707 City Natl. Bk. Bldg., Omaha, Nebr.

HERBERT U. NELSON, *Secretary*
22 W. Monroe St., Chicago, Ill.

HARRY A. TAYLOR, *Treasurer*
520 Main St., East Orange, N. J.

OLIVE DYER, *Executive Secretary*
22 W. Monroe St., Chicago, Ill.

---

* *Also Members of Governing Council for 1946.*

GOVERNING COUNCIL

Term Expiring December 31, 1948

DAVID B. CHILDS.....Kansas City, Mo.
MORRIS M. EWING.....Atlanta, Ga.
H. WALTER GRAVES.....Philadelphia, Pa.
JAY L. HEARIN.....Tampa, Fla.
ORMONDE A. KIEB.....Newark, N. J.
BEN O. KIRKPATRICK.....Tulsa, Okla.
E. W. RUDERT.....Pittsburgh, Pa.
F. DURAND TAYLOR.....New York, N. Y.
RUTH C. YELTON.....San Antonio, Tex.

Term Expiring December 31, 1947

WILLIAM W. BARENDRICK....Portland, Ore.
PAUL O. DRURY.....Washington, D. C.
AMOS G. HEWITT.....New Haven, Conn.
SANBORN O. HOUSER.....Oak Park, Ill.
ELLSWORTH F. IRELAND.....Cincinnati, O.
FRANK T. KING.....Detroit, Mich.
LOUIS MAGINN.....St. Louis, Mo.
THOMAS K. PROCTER....San Francisco, Calif.
PHILIP M. REA.....Los Angeles, Calif.

Term Expiring December 31, 1946

STUART BONDURANT....Winston-Salem, N. C.
KENDALL CADY.....Chicago, Ill.
SEELY CADE.....Newark, N. J.
CLAUDE O. DARBY.....Flint, Mich.
GEORGE W. ELKINS.....Beverly Hills, Calif.
JAMES F. GILSON.....Pittsburgh, Pa.
T. H. MAENNER.....Omaha, Nebr.
HAROLD L. NILES.....Boston, Mass.
GLEN A. WILSON.....Milwaukee, Wis.

Representing Board of Directors, N.A.R.E.B.

R. W. HARPER.....Los Angeles, Calif.

Past Presidents on Governing Council

H. P. HOLMES.....Detroit, Mich.
J. WILLIAM MARKEIM.....Philadelphia, Pa.
ROBERT C. NORDBLOM.....Boston, Mass.
GEORGE R. MORRISON.....Denver, Colo.
CHARLES F. CURRY.....Kansas City, Mo.

CHAPTER OFFICERS, 1946

NEW JERSEY CHAPTER

GEORGE N. WEIMAN, *President*
60 Park Place.....Newark, N. J.

ALBERT R. WALKER, *Vice President*
214 Parkway Avenue.....Plainfield, N. J.

CHRISTINE B. NOLAN, *Vice President*
4500 Bergen Turnpike....North Bergen, N. J.

WALTER KOSTER, *Vice President*
2325 Hudson Boulevard.....Jersey City, N. J.

MILTON STERN, *Vice President*
810 Broad Street.....Newark, N. J.

ALTON VAN HORN, *Secretary*
250 N. Broad Street.....Elizabeth, N. J.

WALTER J. GILL, *Treasurer*
744 Broad Street.....Newark, N. J.

PHILADELPHIA CHAPTER *

H. WALTER GRAVES, *President*
8 South 40th Street.....Philadelphia, Pa.

ALFRED L. HAIG, *Secretary*
7010 Elmwood Avenue.....Philadelphia, Pa.

NEW ENGLAND CHAPTER

RALPH T. HORN, *President*
45 Milk Street.....Boston, Mass.

AMOS G. HEWITT, *Vice President*
205 Church Street.....New Haven, Conn.

FRANK SYLVESTER, *Secretary-Treasurer*
50 Congress Street.....Boston, Mass.

MICHIGAN CHAPTER

HOWARD BLISS, *President*
600 Dime Building.....Detroit, Mich.

HARVEY I. NEDEAU, *Vice President*
Jefferson at Webster.....Muskegon, Mich.

WALTER GUIBORD, *Secretary-Treasurer*
3600 Book Tower.....Detroit, Mich.

LOS ANGELES CHAPTER

STEWART L. CREBS, *President*
124 S. LaBrea Avenue.....Los Angeles, Calif.

CHARLES K. ATLASS, *Vice President*
1061 S. Cloverdale Avenue..Los Angeles, Calif.

JAMES M. UDALL, *Vice President*
1680 N. Vine Street.....Hollywood, Calif.

HENRY G. BEAUMONT, *Secretary-Treasurer*
548 S. San Vicente Boulevard.....
.....Los Angeles, Calif.

PITTSBURGH CHAPTER

GEORGE A. MEYERS, *President*
450 Fourth Avenue.....Pittsburgh, Pa.

THOMAS N. WILSON, *Vice President*
1100 Jones Law Building.....Pittsburgh, Pa.

STANLEY W. ARNHEIM, *Secretary-Treasurer*
541 Wood Street.....Pittsburgh, Pa.

DISTRICT OF COLUMBIA CHAPTER

LEWIS F. COLBERT, *President*
1931 K Street, N. W.....Washington, D. C.

HENRY W. MORGAN, JR., *Vice President*
Southern Building.....Washington, D. C.

WILLIAM N. GRIMES, JR., *Secretary*
15th and Pennsylvania Avenue, N. W.....
.....Washington, D. C.

RAYMOND D. EVANS, *Treasurer*
925 New York Avenue, N. W.....
.....Washington, D. C.

CINCINNATI CHAPTER

K. P. WOOD, Jr., *President*
Union Central Life Insurance Company.....
.....Cincinnati, Ohio

R. GORDAN TARR, *Vice President*
612 W. Fifth Street.....Cincinnati, Ohio

HARRY J. MOHLMAN, *Secretary*
612 Mercantile Library Building.....
.....Cincinnati, Ohio

WILLIAM R. YOUNG, *Treasurer*
Hotel Marting.....Ironton, Ohio

TULSA CHAPTER

T. G. GRANT, *President*
Atco Building.....Tulsa, Okla.

VEDA BOSTICK, *Vice President*
Atlas Life Building.....Tulsa, Okla.

KENNETH CROUCH, *Secretary-Treasurer*
Beacon Life Building.....Tulsa, Okla.

* 1945 officers listed.

ST. LOUIS CHAPTER

DELBERT S. WENZLICK, *President*
3658 W. Pine Boulevard.....St. Louis, Mo.

CAROL V. LAUX, *Secretary*
4658 Gravois Boulevard.....St. Louis, Mo.

NEBRASKA-IOWA CHAPTER

JOHN B. WADSWORTH, *President*
136 S. Main.....Council Bluffs, Ia.

LAMOINE HILLERS, *Vice President*
231 N. Lincoln Avenue.....Hastings, Nebr.

HELEN BENEDICT, *Secretary-Treasurer*
2024 N. 16th Street.....Omaha, Nebr.

MILWAUKEE CHAPTER

GLEN A. WILSON, *President*
161 W. Wisconsin Avenue.....Milwaukee, Wis.

J. A. LIPPERT, *Vice President*
759 N. Water Street.....Milwaukee, Wis.

E. W. LENTZ, *Secretary-Treasurer*
735 N. Water Street.....Milwaukee, Wis.

Advisory Boards & Committees

Institute of Real Estate Management

DIVISION ADVISORY BOARDS

DIVISION OF PUBLICATIONS

48* James C. Downs, Jr.....Chicago, Ill.†
Chairman
47 Fred L. Chapman.....Minneapolis, Minn.
46 H. Walter Graves.....Philadelphia, Pa.

DIVISION OF STANDARDS & PLANNING

48 Nathan Poole.....Washington, D. C.
Chairman
47 K. P. Wood, Jr.....Cincinnati, Ohio
46 James M. Bowler.....Brighton, Mass.

DIVISION OF EDUCATION

48 Ben O. Kirkpatrick.....Tulsa, Okla.
Chairman
47 Joseph R. Smith.....Dallas, Tex.
46 C. Armel Nutter.....Camden, N. J.

DIVISION OF RESEARCH

48 Richard F. Jones, Jr.....Hartford, Conn.
Chairman
47 Richard L. Nelson.....Chicago, Ill.
46 Thomas B. Knowles.....Denver, Colo.

COMMITTEES

ACCREDITING AND ADMISSIONS COMMITTEE

48 Kendall Cady.....Chicago, Ill.
Chairman
47 Wm. W. Barendrick.....Portland, Ore.
48 Seely Cade.....Newark, N. J.
47 Albert J. Covert.....Omaha, Nebr.
47 Morris M. Ewing.....Atlanta, Ga.
47 J. J. Heidacher.....Cincinnati, Ohio
48 Frank T. King.....Detroit, Mich.
46 J. A. Lippert.....Milwaukee, Wis.
47 John J. MacDonald.....Philadelphia, Pa.
48 Louis A. Maginn.....St. Louis, Mo.
47 Philip M. Rea.....Los Angeles, Calif.
46 Edward S. Stimpson.....Cambridge, Mass.
46 F. Durand Taylor.....New York, N. Y.
46 Arthur F. Texter.....Pittsburgh, Pa.
46 Edward Watters.....Tulsa, Okla.
48 Carey Winston.....Washington, D. C.
48 F. Orin Woodbury....Salt Lake City, Utah

BY-LAWS AND REGULATIONS COMMITTEE

48 Kendall Cady.....Chicago, Ill.
Chairman
47 Fred L. Chapman.....Minneapolis, Minn.
46 Stewart L. Crebs.....Los Angeles, Calif.

CHAPTER DELEGATES COMMITTEE

48 Stewart L. Crebs.....Los Angeles, Calif.
Chairman
48 Stanley W. Arnheim.....Pittsburgh, Pa.
46 Veda M. Bostick.....Tulsa, Okla.
47 Walter L. Blore.....Lincoln, Nebr.
47 Lewis F. Colbert.....Washington, D. C.
47 Edmund D. Cook.....Princeton, N. J.
46 Thomas P. Dean.....Boston, Mass.
48 Richard T. Hosler.....Cincinnati, Ohio
46 Carol V. Laux.....St. Louis, Mo.
47 Elmer W. Lentz.....Milwaukee, Wis.
46 Frank T. King.....Detroit, Mich.
48 Robert M. Wilson.....Philadelphia, Pa.

ETHICS AND DISCIPLINE COMMITTEE

48 George R. Morrison.....Denver, Colo.
Chairman
47 Edward C. Hacker.....Lansing, Mich.
46 Donald T. Pomeroy.....Syracuse, N. Y.

EXECUTIVE COMMITTEE

46 Delbert S. Wenzlick.....St. Louis, Mo.
Chairman
46 Kendall Cady.....Chicago, Ill.
46 Charles F. Curry.....Kansas City, Mo.
46 Richard F. Jones, Jr.....Hartford, Conn.
46 Ben O. Kirkpatrick.....Tulsa, Okla.
46 F. Durand Taylor.....New York, N. Y.

MEETINGS COMMITTEE

46 William J. Porter, Jr.....Lansing, Mich.
Chairman
46 Harlan G. Easton.....Omaha, Nebr.
46 Sanborn Houser.....Oak Park, Ill.

MEMBERSHIP COMMITTEE

46 T. H. Maenner.....Omaha, Nebr.
Chairman
46 Wm. J. Barendrick.....Portland, Ore.
46 Stuart Bondurant....Winston-Salem, N. C.
46 Stewart L. Crebs.....Los Angeles, Calif.
46 Richard F. Jones, Jr.....Hartford, Conn.
46 C. Armel Nutter.....Camden, N. J.
46 J. Wallace Paletou.....New Orleans, La.
46 William J. Porter, Jr.....Lansing, Mich.

NOMINATING COMMITTEE

46 Stewart L. Crebs.....Los Angeles, Calif.
Chairman
46 Stuart Bondurant....Winston-Salem, N. C.
46 James C. Downs, Jr.....Chicago, Ill.
46 D. P. Ducy.....Pueblo, Colo.
46 Donald T. Pomeroy.....Syracuse, N. Y.

---

* Dates before names indicate expiration of term.
† (See pages 152 to 160, "Roster of Members" for addresses.)

Certified Property Managers

Institute of Real Estate Management

The following Individual Members of The Institute of Real Estate Management are certified by the Institute as having met its professional standards of competency, integrity, and experience. The figures in parentheses following the names indicate the order in which Certificates were issued. This roster is complete as of December 31, 1945.

ALABAMA

Birmingham

Charles E. Binion (662)..... 2115 First Avenue, N.
Murray Cahill (426)...Massey Bldg., Lobby.
Robert Jemison, Jr. (131)....221 N. 21st St.
C. J. Osment (605).....1921 First Ave., N.
H. Parker Osment (498).2026 Third Ave., N.
William H. Pitts (606)..2026 Third Ave., N.

Mobile

Clarkson M. Hamilton (735)..... 624 Annex, 1st Natl. Bk. Bldg.
Julius E. Marx (559)..... 642 Annex, 1st Natl. Bk. Bldg.
Frank A. Poggi (694)....61 St. Francis St.

ARIZONA

Phoenix

Leonard R. Carpenter (470)..... 341 East Culver St.
John H. Peterson (360)..... 1129 W. Willetta

ARKANSAS

Little Rock

Warren Baldwin (736)....Exchange Bldg.
E. Cornelius Conner (401)..... Exchange Bldg.
Justin Matthews, Jr. (737)..... 121-123 W. Second St.
Charles M. Taylor (280)..406 Louisiana St.

Siloam Springs

Buck Fenno (798)....801 St. Nicholas St.

CALIFORNIA

Alameda

Kenneth Richardson (607)...1432 Park St.

Beverly Hills

George W. Elkins (319)..474 N. Beverly Dr.
Leland P. Reeder (427)..400 N. Beverly Dr.
G. D. Robertson, Jr. (695)..Robertson Bldg.

Glendale

William W. Abelmann (457)..... 501 Security Bldg.

Hollywood

S. V. Beach (262).....6671 Sunset Blvd.
Frank Blount (344)....6020 Fountain Ave.
James M. Udall (428)....1680 N. Vine St.

Long Beach

Harold C. Freeman (480)..... 16 Ocean Center Bldg.

Los Angeles

Charles K. Atlass (242)..... 1061 S. Cloverdale Ave.
Henry G. Beaumont (269)..... 8900 Beverly Blvd.
George Carroll Brush (764)..... 1930 Wilshire Blvd.
F. J. Buckley (263)....5015 Wilshire Blvd.
Stewart L. Crebs (444).124 S. LaBrea Ave.
David F. Culver (243)...257 S. Spring St.
William G. Dickinson (429)..... 729 Rives-Strong Bldg.
Paul O. Drury (139)..1912 S. Glendon Ave.
Paul W. Elmquist (363).911, 607 S. Hill St.
Clem S. Glass (519).....712 S. Spring St.
R. W. Harper (445)..... 1122 Commercial Exchange Bldg.
Harold K. Huntsberger (264)..... 2404 W. Seventh St.
Frank S. Kadletz (244).1038 S. Grand Ave.
Joseph J. Malone (202).461 S. Western Ave.
B. O. Miller (40).....606 S. Hill St.
Louis J. Pfau, Jr. (321)..... 415 Pacific Mutual Bldg.
Philip M. Rea (245)...3723 Wilshire Blvd.
Roy O. Seeley (345)..344 Pacific Elec. Bldg.
John L. Spicer (246)...4933 Elmwood Ave.
Harold M. Stern (364).....602 Haas Bldg.
William Walters (247)...3923 W. Sixth St.

North Hollywood

Henry C. Gerard (663)..... 4637 Lankershim Blvd.

Oakland

Robert W. Begley (416)....1440 Broadway
Norman Ogilvie (524).....528-18th St.

Pasadena

H. L. Gianetti (664).....403 E. Green St.
Harry P. Hammond (609)..... 44 N. Garfield Ave.

Paso Robles

George E. Stephan (322)....2921 Pine St.

San Diego

O. W. Cotton (323).....524 B St.
Ewart W. Goodwin (324)..First Nat. Bldg.

San Francisco

Norbert S. Babin (417)....423 Kearny St.
Vincent T. Mead (418).....151 Sutter St.
Edward H. Molteni (431)....154 Sutter St.
Thomas K. Procter (525).....57 Sutter St.

San Pedro

George H. Getz (738)..... 801 Cabinet Drive, Banning Homes

San Rafael

F. Lloyd Grandi (598).....P O Box 417

Santa Ana

George W. Smith (132)..203 Ramona Bldg.

Wilmington

J. B. Chadwick (560)....807 Avalon Blvd.

COLORADO

Colorado Springs

Frank Cotten, Jr. (610)..127 E. Pikes Peak
Floyd S. Padgett (611)...19 E. Pikes Peak

Denver

Ernest P. DeMoulin, Jr. (419).....
2372 So. Downing
V. J. Dunton (612).410 Midland Sav. Bldg.
N. Lee Foster (613).....
724-5 Denver National Bldg.
Van Holt Garrett (648).....650 17th St.
E. Sanford Gregory (365).....724 17th St.
Harold W. Ingraham (552)....724 17th St.
Thomas B. Knowles (543)....724 17th St.
William F. Kreutter (765).....
510 United States Natl. Bk. Bldg.
Frank L. Lort (762).....1650 Broadway
Max Moore (789).....1725 California St.
George R. Morrison (60)....1650 Broadway
Robert A. Morrison (133)...1650 Broadway
Arther S. Trace (739).....724 17th St.
Henry C. Van Schaack (665)..724 17th St.
Clarence T. Webb. (866).....
4820 East 19th Ave.
Walter H. Wendelin (740)....724 17th St.

Pueblo

Richard J. DesJardins (614).....
Box 815
Thomas J. Downen (615).....Box 1515
D. P. Ducy (134).....Box 815

CONNECTICUT

Bridgeport

Maxwell S. Hancock (561)....160 State St.
Ralph E. Sprague (41).....171 State St.

Bristol

Hilary S. Driscoll (119).....126 Main St.

Greenwich

William MacRossie (86).90 W. Putnam Ave.

Hartford

Robert J. Gaghan (136).....31 Pratt St.
Richard F. Jones, Jr. (137)....49 Pearl St.
Curtis M. Middlebrook (204)..18 Asylum St.
Thomas J. North (766).....49 Pearl Street
Charles B. Rice (741).....18 Asylum St.
Albert M. Rome (205).....11 Asylum St.

New Haven

Amos G. Hewitt (402).....205 Church St.
James D. Kauffman (206)...109 Church St.

South Norwalk

John M. Glover (238).....6 Webster St.

Stamford

Richard W. Fitch, Jr. (403)..P. O. Box 162

Waterbury

John M. Hutchinson (138)..195 N. Main St.

DELAWARE

Wilmington

Arnold Goldsborough (562)...9 E. 12th St.
Emmett S. Hickman (211).203 W. Ninth St.

DISTRICT OF COLUMBIA

Washington

Stephen R. Barker (676).....
Rm. 301, 1201 Conn. Ave.
Richard L. Boss (599).....
1321 Conn. Ave., N. W.
J. Wesley Buchanan (557).1732 K St., N. W.
George M. Carpenter (616).....
927 15th Street, N. W.
Lewis F. Colbert (527)...1931 K St., N. W.
James Crane (790)....1614 K Street, N.W.
Raymond D. Evans (564).....
925 N. Y. Ave., N. W.
T. H. Evans (209).....Washington Bldg.
Roy G. Fristoe (432)..1013 15th St., N. W.
William H. Goraline (34).921 19th St., N. W.
William N. Grimes, Jr. (472).....
15th and Pennsylvania Aves.
Henri P. Henry (286).....
1321 Connecticut Ave., N. W.
Robert T. Highfield (287).....
206 Machinists Bldg.
Howard F. Humphries (326).....
808 N. Capitol St.
Harvey L. Jones (565)....2 Dupont Circle
Frank J. Luchs (4).....1505 H St., N. W.
Earl M. Mackintosh (210).....
Washington Bldg.
F. Moran McConihe (566).....
1321 Conn. Ave., N. W.
Henry W. Morgan, Jr. (567).....
212 Southern Bldg.
Edward T. Offutt, Jr. (327).....
1505 H St., N. W.
Herbert M. Pasewalk (328).....
303 Seventh St., N. W.
Nathan Poole (277).....1737 K St., N. W.
Ross L. Totten (568).....900 F. St., N. W.
Carey Winston (569)....739 15th St., N. W.

FLORIDA

Jacksonville

Richard D. Barker (528).113 E. Forsyth St.
Clinton Burbridge (553).343 W. Forsyth St.
Edward Dwelle, Jr. (448).113 E. Forsyth St.
Mal Haughton, Jr. (141)....108 W. Bay St.
George R. Mason, Jr. (239).P. O. Box 4637

Miami

Kenneth S. Keyes (5)....19 W. Flagler St.
Charles A. Post (742)....151 N. E. 3rd St.
Theodore W. Slack (696).....
749 Ingraham Bldg.

Orlando

S. M. Heasley (506)..15 W. Washington St.

St. Petersburg

Weyman Willingham (329).....
Rm. 230, 464 First Ave., N.

Tampa

Carlton C. Cone (248) ...435 Grand Central
Julian W. Cooper (61).....Box 29
Jay L. Hearin (6).....812 16 Maas Bldg.
David W. Howell (142).....Box 2048
M. H. Mabry (93).....Box 1320
L. F. Pallardy (558).....416 Tampa St.

West Palm Beach

J. E. Hollenbeck (94).....108 S. Olive Ave.
L. M. Studstill (144).....108 S. Olive Ave.

GEORGIA

Atlanta

Alvin B. Cates (697).....201 Hurt Bldg.
John F. Clegg (433).547 Peachtree St., N.E.
Morris M. Ewing (271).65 Forsyth St., N.W.
W. J. Hogan, Jr. (145).....
141 Carnegie Way, N. W.
Paul C. Maddox (272)...506 Standard Bldg.
Frank C. Owens (7).....521 Grant Bldg.
Ward Wight (146).....202 Healey Bldg.

Augusta

Adrian B. Sherman (62)....133 Eighth St.

Macon

William G. Hardeman (449).....
563 Mulberry St.
Thad E. Murphy (570).....470 Cherry St.

Savannah

Robt. P. Constantine (651)..22 E. Bryan St.
Robert J. Dotson (768).....
Cor. Bryan & Whitaker
Thomas C. Helmly (698).....7 Bull St.
Samuel Hornstein (767)...8 West State St.
William F. Lynes, Jr. (652)..31 Drayton St.
Ralph E. Metzger (666)....18 E. Bryan St.

ILLINOIS

Aurora

Herman C. Offutt (699).....15 Island Ave.

Carbondale

I. W. Dill (89).....217 W. Main St.

Chicago

Abram L. Alcorn (330)...2446 E. 75th St.
Arthur L. Anderson (434).7 S. Dearborn St.
John C. Bowers (147).....4628 Broadway
E. E. Burkhard (420) Chgo. Housing.....
Authority, 343 S. Dearborn St.
Kendall Cady (126).....38 S. Dearborn St.
James J. Carroll (148).....1355 E. 53rd St.
John F. Cary (435).....7 S. Dearborn St.
Martin A. Culhane (743).....4545 Broadway
James C. Downs, Jr. (1).38 S. Dearborn St.
John McMullen Ducey (367).208 S. La Salle
Charles William Ehrat (77).....
3180 Sheridan Rd.
James E. Gallagher, Jr. (285).....
461 E. 111th St.
John H. Hagerty (90)...820 N. Tower Ct.
Henry T. Holaman (78)...1501 E. 57th St.
C. Wallace Johnson (571).7 S. Dearborn St.
Ferd Kramer (212).....16 N. Dearborn St.
Fred M. Lorish (6).....1355 E. 53rd St.
J. Ward Martin (346).410 N. Michigan Ave.
Edwin H. Melone (347)..5637 W. Lake St.
Richard Lawrence Nelson (404).....
38 S. Dearborn St.
Donald O'Toole (130).....461 E. 111th St.
Walter P. Pocock (769)...7748 S. Ashland
Frank G. Reynolds (405).....
500 N. Dearborn St.
Bert V. Robins (617).....Gordon Strong Co.,
209 S. State St.
Ralph J. Silverwood (700).....
1505 East 67th St.
Percy E. Wagner (348).6236 Cottage Grove
Tighe E. Woods (281).....8016 S. Clyde

Elgin

E. W. Salisbury (368)...154 Laurel Court

Evanston

William O. Campbell (415)..12 Milburn Pk.
Gwilym Williams (520)..1571 Sherman Ave.

Oak Park

Whitney W. Bowers (406).1043 South Blvd.
Sanborn O. Houser (350)..1026 North Blvd.

Peoria

William W. Elsesser (791).....
308 Lehmann Bldg.

INDIANA

Anderson

A. L. McKee (701).....
Anderson Banking Company

Gary

Henry G. Hay, Jr. (91).....
Rm. 638, 504 Broadway

Hammond

Edward B. Kaelin (9)...5231 Hohman Ave.

Indianapolis

M. L. Hall (70).....129 E. Market St.

South Bend

Marlin Miller (369).....1101 Bellevue
R. Park Wickizer (572).....
232 W. Jefferson Blvd.

IOWA

Council Bluffs

Bruce P. Baker (667).....21 S. 6th St.
John B. Wadsworth (668)....136 S. Main
Paul E. Weaver (669).....550 Mynster

Des Moines

Ralph L. Jester (313)....209 Fleming Bldg.
Arthur S. Kirk (129).....900 Grand Ave.

KANSAS

Dodge City

L. F. Meyers (618).....503 First Avenue

Hays

A. F. Bieker (619).....Weisner Building

Kansas City

George F. Akright (675).....
5219 Chadwick Road

Ness City

Vyrl W. Levan (620).....P. O. Box 55

Topeka

Howard Lyngar (702)..New England Bldg.
David Neiswanger (124)...New Eng. Bldg.

Wichita
Hobart C. Brady (370)..1002 Bitting Bldg.
Melvin M. Williams (288).....
Wheeler Kelly Hagny Bldg.

KENTUCKY

Covington
E. J. Legg (573).....601 Madison Ave.

Louisville
Harry W. Goodman (10).....
601 Louisville Tr. Bldg.

LOUISIANA

Baton Rouge
J. Russell Doiron (600).....Box 218

New Orleans
Stanley M. Lemarie (734).829 Union Street
J. Wallace Paletou (371)....714 Union St.
W. J. Villarrubia (691)....812 Perdido St.

MAINE

South Portland
Donald D. Hathaway (291).....
Lt. U.S.N., 54 Drew Road

MARYLAND

Baltimore
N. Stanley Bortner (507)..912 Keyser Bldg.
George M. Hampson (79).....
1103 Union Tr. Bldg.
Charles H. Hurley (289).....
4230 Lock Raven Blvd.
William J. Martin (473).....
100 W. Uni. Parkway
Peyton B. Strobel (372).2206 N. Charles St.

MASSACHUSETTS

Boston
James H. Alphen (529).....40 Court St.
Thomas P. Dean (703).....75 Tremont St.
William H. Dolben (499).161 Devonshire St.
Francis P. Gately (388).....10 State St.
Basil Gavin (450).....8 Newbury St.
Ralph T. Horn (575).....45 Milk St.
Carleton Hunneman (362)..5 Arlington St.
J. Howard Loughman (96)..10 P. O. Square
F. Paul Morgan (250).....45 Milk St.
John Nordblom (97).....50 Congress St.
Robert C. Nordblom (12)....50 Congress St.
William Pease O'Brien (458).....
209 Washington St.
Lorin D. Paine (213).....31 State St.
James Mason Rothwell (98).....
107 Massachusetts Ave.
Joseph C. Skinner (574)...581 Boylston St.
Frank R. Sylvester (704)...50 Congress St.
Frederick Wayland (531).....
1970 Commonwealth Ave.

Brighton
James M. Bowler (705).....
1568 Commonwealth Ave.
Henry G. Kiggen (530).....
1568 Commonwealth Ave.
Harold L. Niles (500).....
1568 Commonwealth Ave.

Brookline
William H. Dyer (71).....1318 Beacon St.
Clifford V. Miller (13).....1394 Beacon St.
Benjamin A. Richardson (100).....
1394 Beacon St.
Abraham M. Sonnabend (508).....
1870 Beacon St.

Cambridge
Leslie C. Read (653).....
18 Brattle St
E. Burbank Saul (763).....
689 Massachusetts Ave.
Edward S. Stimpson (532)..167 Albany St.

Lynn
Charles W. Turner (14)....56 Central Ave

Newton
Francis Lincoln Buswell (290).....
321 Kenrick St.
Watson G. Cutter (95).....29 Bowdoin St.

Somerville
Harry A. Gilbert (15).....385 Broadway
Edward G. Pyne (654).....385 Broadway

Springfield
Henry M. Clark (101).....100 Broadway

Worcester
Frank B. Clarkson (533)..2 Wild Rose Ave.

MICHIGAN

Detroit
Howard Bliss (292).....600 Dime Bldg.
Issac Jacob Cohen (150).....
3711 Woodward Ave.
Frank A. DeBoos (621)..522 Farwell Bldg.
John A. Dodds (16)..508-600 Griswold St.
Kenneth Draper (706).....530 Shelby St.
Thomas J. Fitzgerald (314)..530 Shelby St.
John Crawford Frost, Jr. (151).....
639 Penobscot Bldg.
William Gerhardt (752).2100 Barlum Tower
Walter Guibord (670)....3600 Book Tower
William C. Haines (293).176 E. Grand Blvd.
Lewis H. Haskins (152)...1009 Ford Bldg.
Jerry C. Hayes (707).....
1109 Detroit Sav. Bk. Bldg.
H. P. Holmes (63)....416 Hammond Bldg.
Frank A. Howes (397).306 Dime Bank Bldg.
Donald D. James (215).700 Penobscot Bldg.
James C. Johnston (153).....
1333 Majestic Bldg.
Frank T. King (154).....751 Griswold St.
William G. Kirby (708).....
500 Guaranty Bldg.
S. Fred Pack (709).....1432 Dime Bldg
Norman C. Scudder (459).....
1780 Penobscot Bldg.
Lee K. Silloway (18)..8th Floor, Buhl Bldg.
John Kedric Smathers (710).....
1225 Ford Bldg.
John S. Spencer (155)..416 Hammond Bldg.
William Wright Tanney (711).....
44 Michigan Ave.
Clarence W. Treadwell (576).....
1002 Lafayette Bldg.
Robert W. Treadwell (407).....
1002 Lafayette Bldg.
Don L. Weber (622)....3953 Somerset Rd.
R. Bliss Wolfe (623)....Lafayette Building

E. Lansing
Albert L. Ehinger (577).124 W. Grand River

Flint
Claude O. Darby (373).....
301-5 F. P. Smith Bldg.
George C. Kellar (261)..304 Sherman Bldg.
Mark H. Piper, Jr. (659).....
602 F. P. Smith Bldg.

Grand Rapids
Silas F. Albert (156).....
206 Peoples Nat. Bk. Bldg.
Robert J. Ogden (501).....
906 Peoples Natl. Bank Bldg.

Lansing

Emil E. Gallas (771)..105 E. Washtenaw St.
Edward G. Hacker (19).....
221½ W. Washtenaw St.
Russell F. Phillips (398).....
802 Bauch Bldg
William Joseph Porter, Jr. (157).....
1016 Prudden Bldg.
C. Rowland Stebbins (20).....
105 E. Washtenaw St.

Muskegon

Harvey I. Nedeau (294).Jefferson at Webster

Pontiac

Floyd Kent (502)....24 West Lawrence St.

MINNESOTA

Duluth

Bert L. Struble (671).....230 W. Superior

Minneapolis

Fred L. Chapman (208).519 Marquette Ave.
Maurice Engler (672)....400 First Ave., N.
Edward W. Kellogg (592).....
519 Marquette Ave.
E. R. Price (64) .....821 Met. Bldg.
James R. Thorpe (65)..519 Marquette Ave.

MISSISSIPPI

Jackson

Leon T. Rogers (21).....Box 486
Swep S. Taylor (792).....
201 Deposit Guaranty Bk. Bldg.

MISSOURI

Joplin

Charles E. Byrd (712).....
214½ West Fourth St.

Kansas City

Geo. R. Auerochs (149).....
214 Brush Creek Blvd.
Byron G. Bliss (351)....404 Fidelity Bldg.
George M. Bliss (103) .....102 E. 9th St.
Harold W. Brown (692)....6 W. 10th St.
William J. Campbell (744)..300 Bryant Bldg.
John F. Campion (713).....2 East 39th St.
David B. Childs (352)....700 Victor Bldg.
Charles F. Curry (158)..921 Baltimore Ave.
B. Haywood Hagerman (474).....
928 Grand Ave.
Lewis Kitchen (714).....928 Grand Ave.
J. Ward McPherson (578).Land Bank Bldg.
Arnold Norman (461)..909 Baltimore Ave.
Carl Ragsdale (542).....200 Temple Bldg.
Carl B. Rechner (295)....1002 Walnut St.
Raymond K. Sheriff (509)..1002 Walnut St.
Lowell Goodman Simonds (251).....
409 Dwight Bldg.
William R. Stanley (375)..1002 Walnut St.
Robert L. Strain (715)..921 Baltimore Ave.
Woodford C. Taylor, Jr. (376).....
921 Baltimore Ave.
Earl K. Townsdin (624)..212-14 E. 10th St.
Robert W. Tureman (593).....
1319 Commerce Bldg.
Frank L. Woodward (660).....
114 W. 10th St. Bldg.

St. Joseph

William C. Barrow (625).816 Frederick Ave.
Howard R. Sisson (716)....704 Francis St.

St. Louis

William F. Baggerman (315).....
5330 Delmar Blvd.
H. L. Cornet, Jr. (296)....719 Chestnut St.
Ralph F. D'Oench (252)..3932 Lindell Blvd.
Carol V. Laux (463)....4658 Gravois Blvd.
Louis Maginn (22)....23 Brentwood Blvd.
F. B. Martin (745).....415 N. 8th St.
Elliott S. Miller (23).....317 N. 11th St.
George W. Riess (594).....721 Locust St.
Ralph Stevener (673)..3658 W. Pine Blvd.
Clarence M. Turley (693).....
1321 Ambassador Bldg.
Delbert S. Wenslick (120).....
3658 W. Pine Blvd.

NEBRASKA

Alliance

Ethel J. Graham (626).....Box 244

Grand Island

Robert S. Wenger (746)..117½ W. 3rd St.

Hastings

W. A. Knicely (770)..124 N. Hastings Ave.
LaMoine Hillers (717)..231 N Lincoln Ave.

Lincoln

Walter L. Blore (674).....1025 J St.

McCook

Lyle A. Wiedman (627)....501 E. First St.

Omaha

Arthur A. Allwine (718).....832 S. 24th.
Helen E. Benedict (747)..2024 N. 16th St.
E. R. Clayton (677)...1116 City Natl. Bank
Albert J. Covert (719)....554 S. 25th Ave
Harlan G. Easton (628)..535 Keeline Bldg.
Victor C. Graham (678)...1701 Harney St.
Harold J. Grove (679).....208 S. 18th St.
William B. Hargleroad, III (464).....
8419 Loveland Dr.
Theodore H. Maenner (579).....
707 City Natl. Bk. Bldg.
Hiram S. Manville (720)....904 N. 40th St.
Harold C. Payne (721)....226 Barker Bldg.
Lloyd M. Peterson (680).....
500 First Natl. Bk. Bldg.
J. E. Pickard (681).....1805 Douglas St.
Lilyan A. Richards (722).....
707 City Natl. Bk. Bldg.
Jesse L. Schroeder (748)....1911 Harney St.
Robert W. York (655).....
500 First Natl. Bank Bldg.

NEW JERSEY

Asbury Park

Theodore F. Appleby (42).....
Main St. & Mattison Ave.

Atlantic City

Rudolph J. Bushell (219).....
245 So. Vermont Ave.
Bernard F. Dever (159).....
S. E. Cor. California & Atlantic Aves.
Joseph D. Farrington (160).....
21 S. Tennessee Ave.
Edward D. Gottlieb (121).1516 Atlantic Ave.
Byron Jenkins (32).....
5209 Atlantic Ave., Ventnor
Russell C. Roney (72)...1421 Atlantic Ave.

Brooklawn

Leon M. Clair (162).....
Broadway & Chestnut St.

Camden

John H. Abrams (772).....540 Cooper St.
Alexander Cooper (163)....700 Federal St.
Ellis Goodman (164).....515 Market St.
Earl R. Lippincott (165)..721 Market St.
J. William Markeim (43)....540 Cooper St.
Charles R. Myers, 2nd (24).....
12 N. Seventh St.
C. Armel Nutter (74).....509 Cooper St.
Harold P. Nutter (166)....509 Cooper St.
Reba N. Obus (167)....101 N. Seventh St.

Abraham J. Rosenfeld (168).....
709 Market St.
R. Raymond Smith (343)....540 Cooper St.
Roy R. Stewart (253)....142 N. Broadway
Leon E. Todd (75).....2623 Westfield Ave.

East Newark

Charles Toyen (510).....900 Passaic Ave.

East Orange

Henry M. Lesher (25).....58 N. Grove St.
George W. Seiler, Jr. (106)..520 Main St.
Harry A. Taylor (2).....520 Main St.

Elizabeth

Frank J. Brown (73).....160 Elmora Ave.
J. Carroll Dolan (629)....250 N. Broad St.
Frederick H. Hoffmann (595).....
1 Union Square
L. S. Kaufman (400).....642 Park Ave.
R. Mason Kirkland (26).....125 Broad St.
Bertram B. Miller (80)....261 N. Broad St.
C. S. Stallard (353).....261 N. Broad St.
Max Tieger (122).....215 Broad St.
A. W. Van Horn (580) ....250 N. Broad St.

Englewood

George R. Fessler (254).....8 Grand Ave.

Hillside

Louis J. Hess (682).....150 Hillside Ave.

Hoboken

Clinton B. Snyder (485)....61 Newark St.

Irvington

John M. Cullerton (630).....
1222 Springfield Ave.

Jersey City

Edward F. Carbin (169)..879 Bergen Ave.
Michael Conner (332).....32 Journal Sq.
Walter Koster (389).....2325 Boulevard
William F. May (395).....Kislak Bldg.
Harry V. Moser (333)....850 Bergen Ave.
Ben Schlossberg (267)....896 Bergen Ave.
Murray R. Siegel (170).....32 Journal Sq.
D. E. O. Somers (128)....700 Bergen Ave.
Anna S. Wolf (487).....389 Jackson Ave.

Kearny

Isidor Mintz (535).....508 Kearney Ave.

Maplewood

J. Lewis Fiacre (334)..1874 Springfield Ave.
Lionel C. Hartford (491)....71 Oakland Rd.
Hawley Jaquith (390).....Depot Plaza

Merchantville

Harry A. Willson (28).....
Cove Rd. & Wayne Ave.

Montclair

George H. Stanton (436)....16 Church St.
Sydney M. Valentine (488)....16 Church St.
John Young, Jr. (489)..406 Bloomfield Ave.

Newark

Sidney G. Bedworth (354)..24 Branford Pl.
Seely Cade (46).....744 Broad St.
William J. Carew (490).....917 Broad St.
Harry Coddington (391).....744 Broad St.
Thomas E. Colleton (581)..515 Clinton Ave.
David Cronheim (45).....89 Branford Pl.
Sargent Dumper (297).....30 Clinton St.
James J. Fitzsimmons (298)..51 Clinton St.
Walter J. Gill (582).....24 Commerce St.
Herbert E. Goldberg (475).....60 Park Pl.
W. Edson Huegel (492)....17 Academy St.
Ormonde A. Kieb (300).....917 Broad St.
Sanford Krasner (493).....60 Park Pl.
Thomas F. Maher, Jr. (355)..800 Broadway
Edward B. McCaffrey (125)..605 Broad St.
Herbert O. Metzger (793)....605 Broad St.
Louis J. Nass (301).....58 Park Pl.
Arthur G. Pulis, Jr. (749)..509 Orange St.
Albert C. Rachlin (521)....17 Academy St.
Israel J. Rachlin (216)....17 Academy St.
Thomas G. Robinson (494)....30 Clinton St.
Joel L. Schlesinger (335)..31 Clinton St.
Milton Stern (495).....810 Broad St.
Harry J. Stevens (81)....478 Central Ave.
Leslie Stevens (683).....605 Broad St.
Carlo C. Tapaldi....228 Mt. Prospect Ave.,
George N. Weiman (302).....60 Park Pl.

Newton

Adolphus Newman Lockwood (172).....
17 Main St.

North Bergen

Cristine B. Nolan (29)..940 Bergen Turnpike

Passaic

Gilbert D. Bogart (273).....667 Main Ave.

Paterson

Samuel P. Vought (123)....7-13 Smith St.

Plainfield

Albert R. Walker (393).....201 Park Ave.

Princeton

Edmund D. Cook (173).....186 Nassau St.

Ridgewood

S. William Walstrum (174).....
201 E. Ridgewood Ave.

Rutherford

Ellwood S. New (421).....6 Ames Ave.

S. Orange

Frederic L. Wolf, Jr. (583).....
7 South Orange Ave.

Summit

Elmer G. Houston (684).....12 Maple St.
John M. Rogers (409).....13 Locust Ave.

Teaneck

Alexander Summer (47).791 Queen Ann Rd.
Herman J. Tulp (175)....339 Cedar Lane

Trenton

Alfred J. Bernstein (596).....
Broad St. Bank Bldg.
H. S. Kline (176).....154 W. State St.

Union

Leonard J. Zehnbauer (48).....
998 Stuyvesant Ave.

Verona

Edward C. Bitter (408)....129 Hillside Ave.

Westwood

Walter E. Hudson (317)..25 Westwood Ave.
Clifton F. Trimble (497)....284 Third Ave.

NEW YORK

Buffalo

Harold E. Barker (631)..47 W. Huron St.
Joseph W. Becker (536)..19 S. Division St.
Philip W. Ransom (537).....7 Court St.
J. B. Wood (379).....2747 Main St.

Metropolitan City of New York

Borough of Brooklyn

James P. Clark (178)....478 Graham Ave.
Frank A. Matrunola (237).6903 Fourth Ave.
Albert R. Mencone (377).....
1176 Bushwick Ave.
Harry A. Moehring (378)....660 Fulton St.

Borough of Manhattan

Herman A. Acker (82)..717 Lexington Ave.
J. Francis Cahill (241)....235 W. 14th St.
Alice B. Dodd (456).....26 W. 8th St.
Harry B. Helmsley (538)..44 East 23rd St.
Herbert R. Houghton (394)..12 E. 41st St.
S. Edwin Kazdin (182).....90 Broad St.
George Keiller (423).....225 Fifth Ave.
Donald O. Kingman (584)....93 Worth St.
Edward F. Lyman (511)....225 Broadway
Harry E. Muecke (503).....530 Fifth Ave.
Walter Oertly (451)....274 Madison Ave.,
Maurice R. Spear (183)....225 Fifth Ave.
F. Durand Taylor (274).....93 Worth St.

Borough of Queens

Frank S. O'Hara (437).....
40-10 82nd St., Jackson Heights

Westchester County

Raymond R. Beatty (256).....
72 Garth Rd., Scarsdale
Harry D. Cole (180).....
1 Stevens Ave., Mount Vernon
Owen A. Mandeville (750).....
364 Post Rd., Larchmont

Syracuse

L. T. Eagan (337).....
205 Starrett-Syracuse Bldg.
George J. Goldstein (522).....
604 S. A. and K. Bldg.
Richard N. Groves (512)..121 E. Genesee St.
Donald T. Pomeroy (184).....
327 Montgomery St.
Jack A. Weber (513)..923 University Bldg.

West Point

A. Mark Smith (465).....

NORTH CAROLINA

Charlotte

J. P. Hackney, Jr. (466)..110½ West 5th St.
Hampton B. Keller (452)..413 S. Tryon St.

Durham

W. A. Lutz (685).....109 Market St.

High Point

Ed Mendenhall (467).116 W. Washington St.

Winston-Salem

Stuart Bondurant (453).....
210 W. Fourth St.

OHIO

Akron

Chauncey C. Howell (303).....
403 Second Nat. Bldg.
Bernard W. Ley (185)....1099 S. Main St.
Clinton R. Miller (632)....330 S. Main St.
A. R. Ritzman (35).....1099 S. Main St.
Louis Wolcott (633).....
403 Second Natl. Bank Bldg.

Canton

Fred H. Broad (438).700 Harter Bk. Bldg.
George W. Gosser (410).127 Second St., N. E.
T. K. Harris (634)....127 Second St., N. E.
Samuel S. Sherman (635).....
700 Harter Bank Building

Cincinnati

Robert A. Cline (83)....The Enquirer Bldg.
Erwin G. Downing (275)
N. W. Cor. Fourth & Walnut Sts.
L. V. DuBois (84).....
S. W. Cor. Fifth & Main Sts.
Julius J. Heidacher (585).....
1027 Enquirer Bldg.
Richard T. Hosler (469).4th and Walnut Sts.
Ellsworth F. Ireland (554).....
4500 Carew Tower
Howard W. Jones (751).....
1027 Enquirer Bldg.
Carl A. Mayer (49).1515 First Nat. Bk. Bldg.
Robert W. Rieckhoff (636).....
111 East Fourth Street
R. Gordon Tarr (637)....612 W. Fifth St.
Lewis A. White (50)..Seventh & Walnut Sts.
K. P. Wood, Jr. (586).....
Union Cent. Life Ins.

Cleveland

Roy C. Carpenter (380)..Euclid 30th Bldg.
Paul C. Davis (539)....515 Superior Ave.
William A. Fox (476).....3030 Euclid Ave.
Louis E. Goldman (540)....71 Euclid Bldg.
Charles E. Norlin (515)....108, The Arcade
Carlton Schultz (36)..The B. F. Keith Bldg.
Ray M. Shimmon (471).....
805 Hippodrome Bldg.
Lamont H. Stofer (443)..6523 Euclid Ave.
Arthur E. Wade (76)....Plain Dealer Bldg.

Columbus

Hayden Edwards (85).....10 E. Long St.
Wallace E. Nelson (638)....40 W. Gay St.
Harold F. Zeig (381).....581 E. Town St.

Dayton

William E. Bohlender (773).....
906 Callahan Bldg.
Sidney Eisenberger (454)..729 Grand Ave.
L. H. Steinman (602)....232 N. Ludlow St.

East Cleveland

Eldon R. Leo (447)....2009 Stanwood Road

Ironton

William R. Young (587).....Hotel Marting

Lakewood

William C. Crawford (440).....
2189 Mars Ave.

Springfield

Harold S. Goodrich (338).....
25 New Zimmerman Bldg.

Toledo

Laurel G. Blair (411)....810 Madison Ave.

OKLAHOMA

Muskogee

E. R. Bryant (639).....1306 Boston

Oklahoma City

Harold F. Bradburn (794).....
Fidelity Natl. Bldg.
V. J. Booth (774).....410 Perrine Bldg.
E. L. Gragg (775)....1400 Petroleum Bldg.

Okmulgee

Addison Sessions (283)..111 N. Grand Ave.

Sand Springs

A. H. Burgess (528).....

DECEMBER

Tulsa

W. J. Bashaw (776)....229 Kennedy Bldg.
Oliver S. Black (777)....23 E. Fourth St.
Veda M. Bostick (477)..21 Atlas Life Bldg.
Richard H. Chauncey (795).....
23 E. Fourth St.
R. B. Collins (478).....204 S. Cheyenne
Kenneth Crouch (479)....230 Beacon Bldg.
Ralph M. Darnell (686)..103 Beacon Bldg.
Dan J. Davisson (480)....230 Beacon Bldg.
G. H. Galbreath (778).....
P. O. Box 488, Natl. Bk. of Tulsa Bldg.
T. G. Grant (482).....311 Atco Bldg.
Ben O. Kirkpatrick (356)..1325 Hunt Bldg.
Ernest C. Leonard (544)....23 E. Fourth St.
Victoria Miller (483).....1325 Hunt Bldg.
Edward Watters (37).....519 S. Main St.
Wade C. Whiteside (779)....21 West 4th St.

OREGON

Portland

William W. Barendrick (188).....
200 Wilcox Bldg.
Robert M. Barger (382).236 S. W. Broadway
William L. Brewster, Jr. (412).....
803 American Bank Bldg.
Harry S. Coleman (357).....
1301 Public Service Bldg.
Leroy D. Draper (383).236 S. W. Broadway
E. P. Fimpel (588)....2333 N. E. 46th Ave.
James R. Haight (51)..408 S. W. Fourth Ave.
C. I. Meyers (339).....
The United States Nat. Bk.
Chester A. Moores (265).415 S. W. Sixth Ave.
David B. Simpson (189)..200 Wilcox Bldg.
Donald L. Woodward (384).....
236 S. W. Broadway

PENNSYLVANIA

Altoona

John Hill (603).....410 C. of C. Bldg.
E. F. McDowell (656)..400-02 Central Trust
T. Chester Parsons (657)....1107 12th Ave.

Chester

Earle F. Hewes (217).....521 Welsh St.

Erie

Floyd A. Baker (516)..Security Bank Bldg.
Rowena L. Hagmann (441)..10 E. 10th St.
E. W. Miller (517)....309-12 Masonic Bldg.

Hazelton

Robert D. Quin (385).....
Hazelton Nat. Bank Bldg.

Norristown

Lewis C. Detwiler (218).....6 E. Airy St.

Philadelphia

Boyd T. Barnard (66)..Lincoln-Liberty Bldg.
Josiah Bunting, 2nd (399)..1424 Walnut St.
Chester J. Cincotta (108).....
200 Bankers Securities Bldg.
Elton G. Crockett (455)..1421 Chestnut St.
Hugh F. Gerhard (589).....
Washington & Ogentz
H. Walter Graves (220).....8 S. 40th St.
Reynold H. Greenberg (38).....
17th & Sansom Sts.
William H. Groetzinger, Jr. (518).....
708 Market St., Natl. Bk. Bldg.
Alfred L. Haig (318)....7010 Elmwood Ave.
Samuel T. Hall (111).....123 S. Broad St.
Roy A. Heymann (112)....215 S. Broad St.
Roy A. Heymann, Jr. (753).213 S. Broad St.
C. Harry Johnson (52)....Packard Bldg.
John G. Keck (114).....1622 N. Broad St.
E. Fred Kemner (190).....
Bustleton & Grant Aves.
James C. Leeper (221)
Room 2929 12 S. 12th St.
James H. Livesly (191).....
S. E. Cor. Sixth & Dickinson Sts.
John J. MacDonald (413).....
Real Estate Trust Bldg.
J. William Markeim (43)..1606 Walnut St.
William I. Mirkil (67)....123 S. Broad St.
D. O. Morton (231)..Walnut & Juniper Sts.
Walter A. Nash (193)..1307 Packard Bldg.
Thomas Calvin Pillion (115).....
Walnut & Juniper Sts.
Glyndon Priestman (53).....
5736 Greene St., Germantown
William Pugh (116).....5713 Market St.
Albert Quell (590).....1420 Walnut St.
Roland R. Randall (340)..1211 Chestnut St.
Herbert H. Rose (222).....8 S. 40th St.
Edward Rosewater (194).....
209 Lewis Tower Bldg.
James C. Seiss (304)....1622 N. Broad St.
Richard J. Seltzer (117).....
Room 2929 12 S. 12th St.
R. Drummond Smith (195).100 S. Broad St.
Walter R. Taylor (224).....27 S. 40th St.
George R. Weikel (225).....
N. E. Cor. 17th & Sansom Sts.
Norman Weiss (39).....213 S. Broad St.
Robert M. Wilson (54).....
Walnut & Juniper Sts.

Pittsburgh

A. J. Aberman (226).....429 Fourth Ave.
M. J. Aberman (227)....429 Fourth Ave.
Stanley W. Arnheim (723)...541 Wood St.
Norman S. Blair (305)....341 Fourth Ave.
M. B. Collins (545).....312 Fourth Ave.
H. M. Curry (546).....312 Fourth Ave.
James F. Gilson (228)....311 Fourth Ave.
William M. Hall (386).695 Washington Blvd.
J. E. Headley (640).....
4th Avenue and Wood Street
Francis H. Jacob (788).....
718 N. Homewood Ave.
George A. Meyers (229)....450 Fourth Ave.
Harry E. Pople (306)....302 Frick Bldg.
B. F. Richards (232)....6006 Centre Ave.
E. W. Rudert (233)...711 Washington Rd.
Meyer H. Sachs (484).....5822 Forbes St.
Frank W. Schornagle (234).440 Fourth Ave.
F. E. Shaughnessy (235)....7216 Kelly St.
James W. Stevenson, Jr. (547).....
666 Washington Rd.
Arthur F. Texter (358).....720 Wood St.
Benjamin Thorpe (649)..218 Bakewell Bldg.
Thomas N. Wilson (548).....
1100 Jones Law Bldg., 530 4th Ave.
Ralph C. Ziegler (687).....
604 Diamond Bank Bdg.

Reading

Miller J. Eckel (307).....20 N. Fourth St.
Sidney L. McIlvain (550).....
616 Washington St.
Jacob L. Rieser (549)..616 Washington St.
M. Duke Sowers (541).....533 Penn. St.
William M. Stottlemyer (641).....
1100 North Ninth Street

Shamokin

Charles E. Hoover (551).....
2-4 W. Independence St.

Wilkes-Barre

Robert L. Casper (55)....Miners Bk. Bldg.
Anne G. Young (591).....
Miners Natl. Bk. Bldg.

Wilkinsburg

G. Robert Berringer (780).....
1311 Swissvale Ave.

Williamsport

Fred B. Wetzel (56).....317 Pine St.

SOUTH CAROLINA

Greenville

Alester G. Furman, Jr. (276).....
1500 Woodside Bldg.

TENNESSEE

Chattanooga

Scott N. Brown (196).....105 W. 8th St.
A. C. Pinckley (642)....4122 Alabama Ave.

Memphis

H. D. Dermon (555)....106 Dermon Bldg.
W. D. Galbreath (68).....
Columbian Mutual Tower
John J. Heflin, Jr. (387).....
Columbian Mutual Tower
Will H. Higgins (414)....149 Monroe Ave.
Albert F. Kerns (424).601 U. P. Bank Bldg.

Nashville

J. B. Gillespie (118)
1132 3d Natl Bank Bldg. 4th Ave., and Church street.

TEXAS

Amarillo

J. Hal Brown (69).....109 E. Ninth St.

Corpus Christi

Rae A. Easley (796)..608 Lower Broadway

Dallas

Ervin W. Atkerson (781).....
P. O. Box 4128, Sta. A
J. A. Burney (782).918 Irwin-Keasler Bldg.
Harold W. Keller (236)....Santa Fe Bldg.
Col., Corps of Engineers, U. S. Army.
Jess Lafferty (783).....108 Thomas Bldg.
J. W. Lindsley, Jr. (784)....1209 Main St.
Max Ploeger, Jr. (658)..111 So. Murphy St.
Joseph R. Smith (785).....
Cotton Exchange Bldg.
Richard V. Works (661).....
1505 Dallas Natl. Bank Bldg.

El Paso

W. M. Zuendt (187)....Bassett Tower Bldg.

Fort Worth

E. Morgan Townsen (786).Electric Building

Harlingen

W. Vernon Walsh (787).....
109 W. Van Buren St.
William B. Uhlhorn (797).....
213 S. First St.

San Antonio

A. H. Cadwallader, Jr. (197).....
935 Majestic Bldg.
Ruth C. Yelton (604)....618 Gunter Bldg.

UTAH

Salt Lake City

H. P. Kipp (504).....151 So. Main St.
F. Orin Woodbury (58).....
18 E. on S. Temple St.

VIRGINIA

Arlington

Jack R. Jones (597).....
1403 N. Court House Rd.

Norfolk

D. H. Goodman (199)....600 Dickson Bldg.
Robert C. Goodman (688).600 Dickson Bldg.
Virginius H. Nusbaum (724).148 Granby St.
Irving F. Truitt (689).....438 Boush St.

Richmond

Alfred L. Blake, Jr., (556)....20 N. 8th St.
Merrill E. Raab (200)....710 E. Main St.
Morton G. Thalhimer (57)..1013 E. Main St.

WASHINGTON

Bellingham

E. A. Wheeler (257)...1411 Commercial St.

Seattle

Arthur Z. Boid (258).....810 Second Ave.
Bert G. Owen (259).....310 Republic Bldg.
Donald H. Yates (342)..302 Republic Bldg.
Clarence W. Zaar (650).4529 California Ave.

Tacoma

Harold A. Allen (690).....1012 Rust Bldg.
Herbert F. Syford (754)..400 Fidelity Bldg.

WEST VIRGINIA

Huntington

K. Ross Lutz (643).....915 Fifth Avenue

WISCONSIN

Madison

D. J. Benedict (59).....24 W. Mifflin St.
Byron L. Caldwell (442).....
155 Lakewood Blvd.
Earl D. Haley (359).....124 State St.
Harry B. Haley (311).....124 State St.
Merrill J. Haley.....124 State St.

Milwaukee

Melvin M. Biehl (755)..4738 W. Lisbon Ave.
Herbert W. Engel (725)..1225 S. 16th St.
Gene J. Hartung (726)..1826 W. Center St.
Irwin A. Henschel (756)..2246 N. 27th St.
H. L. Kadish (727).Rm. 316, 808 N. 3rd St.
Fred Kress (728).....1008 N. 6th St.
Isabel Rheins Kress (729)..1008 N. 6th St.
Elmer W. Lentz (646)....735 N. Water St.
J. A. Lippert (647).....759 N. Water St.
Ruth E. Mueller (757).....
742 N. Plankinton Ave.
J. Clifford Olson (758)....1032 S. 105 Ct.
Hugo Porth (730).....339 W North Ave.
August Richter, Jr. (759).....
152 W. Wisconsin Ave.
David H. Sandler (760)....2116 N. 3rd St.
Iver B. Strandberg (731).4709 W. Center St.
Ambrose Sullivan (732)...5311 N. Diversey
V. L. White (761).....611 N. Broadway
Glen A. Wilson (505).....
161 W. Wisconsin Ave.

BRITISH COLUMBIA, CANADA

Vancouver

John Gibson Walker (201).....
Emergency Shelter Adm. Royal Bank Bldg.

ONTARIO, CANADA

Toronto

Cyril R. DeMara (733).....372 Bay St.

The Officers of the Institute announce with sincere regret the death of the following members:

WARREN S. DEAN, CPM, Washington, D. C.
THOMAS A. GARIBALDI, CPM, Hoboken, N. J.

DECEMBER 1945

PRINTED IN THE U. S. A. BY R. R. DONNELLEY & SONS COMPANY, CRAWFORDSVILLE, INDIANA